

Do Controlling Shareholders' Expropriation Incentives Derive a Link between Corporate Governance and Firm Value? Evidence from the Aftermath of Korean Financial Crisis

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Abstract

We show that during the 1997 Korean financial crisis, firms with weak corporate governance experience a larger drop in the value of their equity, but during the post-crisis recovery period, such firms experience a larger rebound in their share values. These results are robust for different measures of corporate governance and hold when we control for a variety of variables that affect firm performance during these periods of time, such as risk and overreaction variables. To the extent that the incentive for controlling shareholders to expropriate minority shareholders goes up (down) during the crisis (boom) period due to the fall (increase) in expected return on investment, our results are consistent with the view that controlling shareholders' expropriation incentives derives a link between corporate governance and firm value. We also find that other bad (good) news in the economy affects firms with weak corporate governance more negatively (positively) than those with good corporate governance, further supporting this view.

The link between corporate governance and firm value during an economic crisis period has been examined extensively. The existing literature convincingly shows that firms with poor corporate governance suffer more during this period. For example, Johnson, Boone, Breach, and Friedman (2000) show that for a sample of 25 emerging countries, governance variables, such as investor protection indices and the quality of law enforcement, explain more of the variation in exchange rates and stock market performance during the Asian crisis. Extending Johnson et al. (2000) to firm-level data of five East Asian countries, Mitton (2002) finds that firms with higher disclosure quality, greater transparency, higher outside ownership concentration, and corporate focus experienced better stock price performance during the crisis. Lemmon and Lins (2001) also show that during the Asian financial crisis, firms in which controlling owner-managers owned more of the control rights, but fewer cash flow rights, suffered more loss of share values. Using detailed firm-specific governance variables in the Korean market, Baek, Kang, and Park (2004) further show that firms with higher ownership concentration by unaffiliated foreign investors and those with higher disclosure quality experience a smaller reduction in their share value. In contrast, chaebol firms with concentrated ownership by controlling family shareholders and those in which the controlling shareholders' voting rights exceed their cash flow rights experience a larger drop in the value of their equity.

The most widely accepted interpretation for these results is that controlling shareholders have strong incentives to expropriate minority shareholders during an unexpected crisis period. This is because during a crisis the incentive for controlling shareholders to expropriate minority shareholders goes up as the expected return on investment falls. For example, Johnson et al. (2000) argue that the external shock to returns lowers the marginal cost to insiders of diverting resources away from profitable investment projects and thus increase the expected level of expropriation. This view implies that controlling shareholders' incentives to expropriate minority shareholders are the key channel through which corporate governance affects firm value during the crisis. We term this conjecture the expropriation hypothesis.

However, the positive relation between the quality of corporate governance and the change in firm value during the crisis is also consistent with three other alternative explanations. For instance, the

relationship-based financial system in East Asia worked well prior to the 1997 Asian financial crisis, and thus investors might ignore weaknesses of East Asian firms. Alternatively, it could be that investors did not have full information on whether or not their funds were being deployed appropriately during this time of the period, but the crisis exposed the inherent weakness in the corporate governance systems of East Asian countries, triggering greater investor awareness of the problems in the region and led to them pulling-out (Rajan and Zingales, 1998). This view suggests that greater investor awareness of weakness in corporate governance is the main driving force linking corporate governance to the change in firm value during the crisis period. We term this view the information hypothesis. According to the information hypothesis, poor performance of firms with weak corporate governance is not necessarily due to the increased level of expropriation during the crisis period, but rather due to investors paying more attention to corporate governance problems that have been hidden underneath.

Another alternative explanation for poor performance of firms with weak corporate governance during the crisis period is that governance measures used in the previous studies are somehow closely correlated with firms' sensitivity to business conditions. In fact, our sample firms show a strong negative correlation between firm-level governance measures and systematic risk estimated by the market model beta, suggesting that poorly governed firms have higher sensitivity to change in market conditions. Thus, one would expect that firms with weak corporate governance suffer more when the market performs poorly. We term this conjecture the risk hypothesis.

The last alternative explanation is related to overreaction. With this explanation, for some reason, investors overreact to a shock and the degree of investors' overreaction is more pronounced for poorly governed firms. Like other hypotheses, this overreaction hypothesis also implies that there should be a positive relation between the change in firm value during the crisis period and the quality of its corporate governance.

In this paper, we examine the importance of these four alternative explanations as key factors that derive the link between corporate governance and firm value and attempt to understand better this link

during the crisis period. To evaluate the validity of each of these four hypotheses in explaining the link between corporate governance and firm value during the crisis period, we examine such link during the post-crisis period where firms recover from the external shock. The novelty of this approach is that the recovery period allows us to distinguish among the four explanations as the key driving force through which corporate governance affects firm value. For example, all the hypotheses discussed above provide the same predictions of positive relation between the quality of corporate governance and the change in firm value during the crisis period. As a consequence, evidence from the previous literature, which shows that poorly governed firms suffer more during the crisis period, does not help us much gauge the relative importance of expropriation hypothesis against three other alternative hypotheses.

In contrast, during the recovery period, the expropriation and the information hypotheses have opposite predictions regarding the link between corporate governance and firm value. For example, if increased incentive of controlling shareholders to expropriate minority shareholders during crisis period is the main reason for poor performance of firms with weak corporate governance, then one would expect that these firms perform better during the recovery period. This is because the prospect for future investment opportunity improves significantly in recovery period and accordingly there will be less incentive for controlling shareholder to expropriate minority shareholders.

Moreover, more profitable investment opportunities during the recovery period generate higher cash flows that can be distributed to investors. This reduces expropriation risk, which in turn decreases the risk premium used to discount future cash flows.

All these factors help the stock price rebound more for poorly governed firms during the recovery period. In contrast, the information hypothesis predicts the opposite. If greater investor awareness of poor corporate governance revealed during the crisis period is the main reason for poor performance of firms with weak corporate governance, one would expect performance of these firms to be worse during the recovery period since the recovery does not change investor awareness for firms with poor corporate governance. Thus, unlike the expropriation hypothesis, the information hypothesis does not predict a

reversal of poor crisis-period performance for firms with weak corporate governance during the reversal period.

Note that the risk hypothesis predicts that the increase in firm value during the recovery period will be larger for high beta firms. High beta firms would perform worse during the crisis period, but perform better during the recovery period, since these firms are more sensitive to the change in business conditions. Similarly, the overreaction hypothesis implies that there should be a relation between a firm's stock price fall in the crisis period and the increase in the recovery period. If the main reason for poor performance of firms with weak corporate governance during the crisis period is either high risk or overreaction, one would expect that the effect of corporate governance variables on firm value during the recovery period will disappear or will be attenuated, once the effects of beta and/or overreaction are controlled for.

Using a large sample of Korean firms during the 1997-1998 financial crisis and the 1998-1999 post-crisis recovery periods, we find a strong support for the expropriation hypothesis. Consistent with the previous literature, we find that poorly governed firms drop more in stock prices during the crisis period. However, their stock prices increase significantly more during the recovery period.

Stock prices of high beta firms perform worse during the crisis period, but rebound more during the recovery period. Similarly, firms whose stock prices drop more during the pre-crisis (crisis) period perform better during the crisis (recovery) period, indicating that the contrarian effects in stock returns that have been emphasized in the asset pricing literature also play an important role in explaining the cross-sectional variation in firm value during the aftermath of the Korean financial crisis. Controlling for beta and overreaction effects, however, never reduces the impact of governance variables in explaining the change in firm value.

We also find that poorly governed firms suffer more loss of accounting profit during the crisis period, but experience larger rebound of accounting profit during the recovery period. This result is again consistent with expropriation hypothesis.

Finally, we provide auxiliary evidence showing that the bad news announcements about the

deteriorating economic environment affect firms with weak corporate governance more negatively than those with good corporate governance. In contrast, the good news announcements that are associated with brighter prospect for future investment opportunities affect firms with weak corporate governance more positively than those with good corporate governance. To the extent that these news events are largely unexpected ones and thus represent relatively exogenous shocks that significantly affect the expected return on investment, our results further confirm the relevance of the expropriation hypothesis in deriving the link between corporate governance and firm value.

We perform several robustness checks on the data. We use various measures of firm risk, overvaluation, and corporate governance and find evidence that is consistent with the expropriation hypothesis. We also experiment with alternative time periods for the shock and recovery periods and find robust results.

Our findings have an important implication for the growing literature on law and finance. This literature has demonstrated the importance of investor protection in the various aspects of financial markets. For example, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998), hereafter referred to as LLSV, show that markets with better investor protections have larger and deeper capital markets. The markets with better investor protections also have higher valuation of listed firm relative to their assets (LLSV (2002), Claessens et al. (2002)), a higher number of listed firms (LLSV (1997)), greater use of external finance (LLSV (1998)), and larger investments from external funds (Rajan and Zingales (1998), Demirgüç-Kunt and Maksimovic (1998)). These markets also provide higher quality of accounting information (Hung (2001), Ball et al. (2003), Fan and Wong (2002), Leuz et al. (2003)). It is also shown that poor investor protection is associated with higher liquidity costs (Brockman and Chung (2003)), and poor property rights protection of public investors impedes informed arbitrage to capitalize on firm-specific information and leads to less informationally efficient stock prices (Morck et al. (2000)). Recently, Djankov et al. (2006) develop the anti-self-dealing index and show that this index predicts a variety of stock market outcomes.

The fundamental premise of this literature is based on the importance of investor protection

preventing the expropriation of minority investors (LLSV (2002)). Our evidence shows that investor expropriation is indeed the main channel through which corporate governance affects firm value.

This paper proceeds as follows. The next section discusses the data, the variables of interest used in the study, and sample characteristics. Section II presents the main results for the cross-sectional determinants of firm performance during the crisis and post-crisis period. Section III presents the results of robustness tests. Section IV concludes the paper.

I. Data, Key Variables, and Sample Characteristics

A. Data

Our initial sample consists of 644 non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. The 1997-1998 periods is the financial crisis period used in Baek, Kang, and Park (2004). We expand their sample period to the end of 1999, since the focus of our paper is on differences in the link between corporate governance and firm value during the crisis and the post-crisis recovery periods.

Figure 1 shows the changes in the Korean Composite Stock Price Index (KOSPI) from January 1996 to December 1999. The KOSPI is a market capitalization weighted price index of all firms listed on the KSE and is the most widely used index to evaluate the market performance. At the end of January 1996, the KOSPI was 879. It went through periods of ups and downs, and reached the highest point at the end of June 1997 with the index level of 944. After that, the KOSPI started to fall until September 1998 at which the index level was 406. Thus, following the previous studies, we set the period from July 1997 to September 1998 as a crisis period.¹ Since October 1998, the Korean stock market bounced back and quickly recovered its previous losses. In particular, during the year of 1999, the optimism gained momentum and the stock

¹ The first event that appears to have triggered the Asian financial crisis is the announcement on July 2, 1997 that Thai baht would be allowed to float (Chowdhry and Goyal, 2000).

market performance became spectacular. At the end of 1999, the KOSPI reached its highest point of 1214. This movement in the KOSPI suggests that the investors would have realized the holding period return of about 300% if they had invested in the market portfolio from October 1998 to December 1999. We set the period from October 1998 to December 1999 as a recovery period.²

B. Key Variables Related to Main Hypotheses

To evaluate the hypotheses discussed in the previous section, we use holding period returns (HPRs) during the shock and recovery periods as the measures of firm performance (dependent variables) and following variables as explanatory variables for each hypothesis.

Expropriation variables: As key explanatory variables for the expropriation hypothesis, we use the disparity between cash flow rights and voting rights and equity ownership by controlling shareholders. Claessens, Djankov, and Lang (2000) document a large divergence between cash flow rights and voting rights for many East Asian firms. They show that the widespread use of pyramid ownership structures and cross-holdings among firms allows controlling shareholders to exercise full control over a firm despite holding a relatively small portion of its cash flow rights. Claessens, Djankov, Fan, and Lang (1999), Lemmon and Lins (2001), Mitton (2002), and LLSV (2002) find that firm value is negatively related to the separation of the cash flow and voting rights of the controlling shareholders.

Following this literature, we measure the cash flow rights of the controlling shareholders (owner-managers and their family members) as the sum of the direct equity ownership and the product of the ownership stakes obtained indirectly along the chain in a pyramid structure (by tracing up to two layers of control chains). Voting rights are measured as the sum of direct equity ownership and the minimum value

² We also examine alternative shock and recovery periods and report the results in section IV. The results are not sensitive to the alternative choice of shock and recovery periods.

of ownership in the chain of voting rights. However, unlike previous studies that used block ownership to estimate voting rights, we use both total and block ownership. Total holdings data allows us to measure the controlling shareholders' voting rights more accurately.

The divergence between cash flow rights and control rights is computed as the logarithm of the ratio of voting rights to cash flow rights (disparity variable). If owner-managers use their control rights with little regard to the wealth of other shareholders, but with great regard for maximizing their own private benefits, we would expect that owner-managers of firms with high ratio of voting rights to cash flow right have strong incentives to expropriate other shareholders.

The next key variable we consider as the measure of expropriation is equity ownership by controlling shareholders. To the extent that owner-managers with less concentrated ownership have a greater agency problem that arises from the separation of ownership and control (Jensen and Meckling (1976)), we expect that these owner-managers have stronger incentives to expropriate other shareholders.

We also use as alternative measures of expropriation the sum of block holdings by all shareholders owning 5% or more of issued shares, including holdings by owner-managers, their family members, affiliated firms, and unaffiliated investors, and the block holdings by the largest shareholder owning 5% or more of issued shares, respectively. The block holdings by the largest shareholder are further broken down into largest managerial block ownership and largest non-managerial block ownership. To the extent that concentrated ownership by blockholders provides them with strong incentives to monitor managerial performance, we expect owner-managers of firms with these ownership characteristics to have less incentive to expropriate other shareholders.

The last measure we consider is the extent of a firm's diversification. Mitton (2002) argues that diversified firms suffer more loss of value during a crisis than focused firms since expropriation of minority shareholders is likely to be more severe. Lins and Servaes (2002) also argue that the severe market imperfections found in emerging markets increase the potential agency costs associated with diversification and that greater asymmetric information allows management and large shareholders to exploit minority

shareholders more easily. To measure this effect, we use an interaction variable between the diversification dummy variable and the diversity of investment opportunities. The diversification dummy variable is set to equal to zero if 90% or more of a firm's sales come from one three-digit SIC. Following Rajan, Servaes, and Zingales (2000), we identify competing undiversified firms for each segment of diversified firms at a four-digit SIC level and measure the standard deviation of the Tobin's Q (book value of debt plus market value of equity/total assets) of matched undiversified firms for all segments of a diversified firm. Diversified firms with standard deviations above (below) the median for all diversified firms are defined as having high (low) variation of investment opportunities.

Risk variables: To evaluate the risk hypothesis, we use beta as the key measure of firm risk, which is estimated by the slope of the market model regression. To estimate beta before the shock (recovery) period, we use one-year daily stock returns during the 1996 (1997) period.

We also use the following three variables as the measures of firm risk. First, we use the residual variance as the measure of firm-specific risk. The residual variance is estimated by the variance of the market model error during the 1996 (1997) period. Second, we use the total risk, which is measured as standard deviation of daily returns during the 1996 (1997) period. Finally, we use earnings volatility, which is measured as the standard deviation of net income for the previous ten years. Thus, for the shock (recovery) period, we use the standard deviation of net income during the 1986-1995 (1987-1996) period to estimate earnings volatility.

The risk hypothesis predicts that high risk firms perform worse during the crisis period, but perform better during the recovery period, since these firms are more sensitive to the change in market conditions.

Overreaction variables: To evaluate the overreaction hypothesis, we use past HPRs as our key measure. The overreaction hypothesis predicts a contrarian behavior in return movements when viewed in a long-term basis. Thus, firms that performed better before the crisis period would drop more during the crisis

period. Similarly, firms that performed worse during the crisis period would bounce back more during the recovery period. We compute the HPR of firm i between $t1$ and $t2$ as

$$HPR_i(t1, t2) = (1 + R_{i,t1})(1 + R_{i,t1+1})(1 + R_{i,t1+2})(1 + R_{i,t1+3}) \dots (1 + R_{i,t2}) - 1$$

where $R_{i,t}$ is the daily return of firm i at time t . As past holding period returns for the shock and recovery periods, we use HPR during the year of 1996 and HPR during the shock period (July 1997 to September 1998), respectively.

We also use two additional measures to proxy for overreaction; market-to-book and price earnings ratios. These valuation measures are used in the previous literature as measures of firm overvaluation, so that firms with high market to book or price earnings ratios before the crisis period may drop more during the crisis period.

Control variables: We control for several other variables that may affect firm performance during the crisis and recovery periods. It can be argued that large firms generally find it easier to secure external finance, are less likely to rely on bank borrowing for their financing, will have smaller informational asymmetries, and are more established than smaller firms. They also tend to have a large asset base that can be used as collateral. All these factors suggest that large firms are less vulnerable to external shock. We measure firm size as the logarithm of total assets.

Lang and Stulz (1992) and Opler and Titman (1994) find that firms that maintain a high leverage ratio and have specialized business lines tend to experience more difficulties during economic downturns. Since highly leveraged firms would have more difficulty obtaining external financing during a crisis, we would expect such firms to experience a larger drop in equity value. We measure leverage as the ratio of total debt to total assets.

In Korea, a large business group is often referred to as a *chaebol*. Chaebol firms operate in many different industries, are bound together by a nexus of explicit and implicit contracts, and maintain substantial business ties with other firms in their group. They are also characterized by an extensive

arrangement of pyramidal or multi-layered shareholding agreements and the existence of cross-debt guarantees among member firms. If risk-sharing among chaebol firms and the operation of an internal capital market within chaebols allows its members to survive the external shock, the structure of diversified business groups can have a positive effect on the value of their members. To examine this issue, we use a dummy variable that equals one if a firm belongs to one of the 30 largest business groups.

Khanna and Palepu (2000) show that foreign institutional investors serve a valuable monitoring function as emerging markets integrate with the global economy. We therefore expect that the fall (rise) in the firm value is smaller (higher) when foreign investors hold larger amount of shares during the crisis (recovery) period.

The ability of firms to secure foreign capital through American Depository Receipts (ADR) can affect firm value in a positive way. For example, firms that can raise capital through ADR will experience a smaller drop in share value during the crisis, since these firms have access to alternative sources of financing when the domestic capital markets do not function well. Moreover, Mitton (2002) argues that firms with a listed ADR have higher disclosure quality. Reese and Weisbach (2002) also argue that one reason why non-U.S. firms choose to cross-list in the U.S. is the protection of minority shareholder rights associated with S.E.C. registration. This increasing transparency and investor protection are expected to have a positive effect on stock price performance during the crisis. To examine the effect of having a listed ADR on firm value, we use a dummy variable that takes the value of one if the firm has an ADR listed in the United States.

Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000) argue that business groups provide controlling shareholders with an opportunity to transfer wealth to themselves from the firm. Using data from financial investments in affiliated and non-affiliated Korean firms, Joh (2002) finds that financial investment in non-affiliated firms raises firm profitability before the crisis, but financial investment in affiliated firms lowers its profitability. These results suggest inefficiency in resource allocation among member firms within the same chaebol, and support the tunneling view of Johnson et al (2000). We

measure financial investments in affiliated (non-affiliated) firms as the ratio of financial securities invested in affiliated (non-affiliated) firms to the firm's total assets.

When firms experience a large economic shock, they may turn to external capital markets and/or internally generated cash flows as well as curtailing new investments. Less financially constrained firms or firms with internal sources of financing should therefore suffer fewer difficulties. As a measure of liquidity, we use the ratio of cash flow to total assets. We compute cash flow as the sum of operating income and depreciation.

Finally, we control for other factors such as a firm's future investment opportunity and industry effects. We use Tobin's q (book value of debt plus market value of equity/total assets) and industry dummy variables to control for future investment opportunity and industry effects, respectively.

Table I provides summary statistics of our sample firms as of the end of fiscal years 1996 and 1997, respectively. We obtain the daily stock return data from the Stock Database of the Korea Securities Research Institute, which includes all firms listed on the KSE. Financial data are obtained from the Listed Company Database of the Korean Listed Companies Association.

C. Sample Characteristics

The average ratio of voting rights to cash flow rights is 3.85 in 1996 and 2.15 in 1997. In 1996, the average equity ownership by controlling shareholders and the average equity ownership by affiliated firms are 20.24% and 9.00%, respectively. The corresponding values in 1997 are 20.57% and 12.56%. The sum of block ownership by all shareholders is on average 30.94% in 1996 and 39.66% in 1997. The average of largest blockholder concentration, as measured by the block holdings of the largest shareholder owning 5% or more of shares, is 18.95% in 1996 and 21.41% in 1997. The average largest managerial blockholder concentration – block holdings by owners involved with management – is 11.20% in 1996 and 12.47% in 1997. The corresponding values for the largest non-managerial blockholder concentration – block holdings

by largest shareholders who are not associated with management – are 7.75% and 9.93%, respectively. Equity ownership by foreign investors averages 4.82% and 4.60%, respectively.

The mean beta is 0.85 in 1996 and 0.90 in 1997. The average residual variance is 0.07 in 1996 and 0.15 in 1997. The average standard deviation of previous daily returns is higher in 1997 (4.08) than in 1996 (2.83). We find the similar pattern for earnings volatility.

Three valuation measures (i.e., previous HPR, market-to-book ratio, and price-earnings ratio) show that firm value is much higher in 1996 than in 1997. For example, the means of previous HPRs, market-to-book ratios, and price-earnings ratios in 1996 are 0.17, 1.44, and 33.88, respectively. The corresponding numbers in 1997 are -0.70, 0.97, and 23.83.

The average size of firms measured by total assets is 611 billion won in 1996 and 859 billion won in 1997, and the average leverage ratio is 72.1% in 1996 and 74.6% in 1997. In 1996 and 1997, the ratios of cash flow (operating income + depreciation) to total assets are on average 5.2% and 4.8%, respectively, and the means of Tobin's q are 1.10 and 0.96. The average ratio of financial investment in affiliated (unaffiliated) firms to total assets is 8.9% (3.4%) in 1996 and 6.9% (1.9%) in 1997. In 1996 and 1997, respectively, about 2.33% and 2.64% of our sample have an ADR listed in the U.S., and diversified firms account for 32.66% and 29.70% of the total sample.

Panels A and B of Table II provides correlations coefficients among our key variables related to expropriation, risk, and overreaction hypotheses and the corresponding p -values during the shock and the recovery periods, respectively. Not surprisingly, in both periods, the correlation between the disparity variable and equity ownership by controlling shareholders is strongly negative. During the shock period, the disparity variable is positively related to the beta, and negatively related to the previous HPR. These results suggest that firms with weak governance (i.e., high disparity) are either those that have high systematic risk or those that perform poorly. Therefore, it could be that poorly governed firms suffer more loss of value either because they are more sensitive to market conditions or because their stock prices increased too much in the previous period, not necessarily because of their weak corporate governance. We

find a similar pattern for firms during the recovery period.

In the next section, we address the issue as to whether the change in firm value during the crisis period is driven by either corporate governance or other alternative factors such as information, risk, and overreaction.

II. Cross-Sectional Determinants of Firm Performance during Crisis and Post-Crisis Periods

A. Univariate Test

As discussed in the introduction section, the expropriation hypothesis predicts that poorly governed firms perform worse during the shock period but perform better during the recovery period. In contrast, the information hypothesis predicts that poorly governed firms continuously perform worse during both the shock and recovery periods. To examine these predictions of the change in firm value, we partition our sample firms by the sample medians of key ownership variables at the end of fiscal years 1996 and 1997, respectively, and then compare the HPRs during the shock (July 1997 to September 1998) and recovery (October 1998 to December 1999) periods.

Panel A of Table III uses the ratio of voting rights to cash flow rights as a key ownership variable. During the shock period, firms with high disparity realize an average (median) HPR of -72.3% (-78.4%), while firms with low disparity realize an average (median) HPR of -68.1% (-74.3%). The differences in mean and median HPRs between these two subsamples are significant at the 10% level. These results are consistent with both expropriation and information hypotheses. During the recovery period, firms with high disparity realize an average (median) HPR of 167.1% (86.7%), while firms with low disparity realize an average (median) HPR of 96.5% (47.0%). The differences in mean and median HPRs between these two subsamples are again significant at the 1% level. These results, together with those during the shock period, suggest that poorly governed firms suffer more during the shock period but perform better during the

recovery period. This evidence of reversal supports the expropriation hypothesis but contradicts the information hypothesis.

In Panel B of Table III, we use equity ownership by controlling shareholders as a key ownership variable. We find that firms with lower equity ownership by controlling shareholders suffer more during the shock period but bounce back more during the recovery period, again supporting the expropriation hypothesis.

However, the greater reversal of holding period returns for firms with weak governance could be due to the factors not related to ownership structure. It could be that ownership variables are correlated with other aspects of firm characteristics such as firm risk. The risk hypothesis predicts that firms with high betas perform worse during the shock period and perform better during the recovery period. Panel C of Table III, which bifurcates the sample firms according to the sample median beta, shows the results that are consistent with such predictions. During the shock period, high beta firms experience a mean (median) loss of about 74.0% (78.5%), while the corresponding loss is 64.7% (73.2%) for low beta firms. The differences in mean and median losses between these two groups are both significant at the 1% level. During the recovery period, this pattern is reversed, however. High beta firms experience a mean (median) gain of about 145.6% (64.2%), while the corresponding gain is 109.9% (59.2%) for low beta firms. Although the median difference between the two groups is not significant, the mean difference is significant at the 10% level.

The patterns of holding period returns for firms with weak corporate governance in Panels A and B are also consistent with the prediction of the overreaction hypothesis. The overreaction hypothesis predicts that firms that did better in the past do worse subsequently simply because of the contrarian effects in stock returns. Thus, according to the overreaction hypothesis, we expect that firms that perform worse in the shock period do better during the recovery period. We find evidence that is consistent with this prediction. In Panel D of Table III, we classify the sample firms according to the sample median past stock return performance. During the recovery period, firms that perform worse during the shock period on average bounce back by 176.6%, a figure more than twice as large as that for firms that perform better during the

shock period as 80.4%. However, during the shock period, we do not find evidence consistent with the overreaction hypothesis.

B. Cross-Sectional Variation in HPRs

The previous section shows that the results are consistent with the expropriation hypothesis, but not with the information hypothesis. The results are also consistent with both risk and overreaction hypotheses. In this section, we attempt to evaluate the relative importance of each of these three competing hypotheses. Our empirical strategy is to run cross-sectional regression of HPRs on firm-specific variables that capture expropriation, risk, and overreaction hypotheses, controlling for various other variables that may affect firm value.

Table IV shows the results from the cross-sectional regression. As dependent variable, regressions (1) through (5) use the HPRs during the shock period, and regressions (6) through (10) use the HPRs during the recovery period. Regression (1) includes the logarithm of the ratio of voting rights to cash flow rights as a key explanatory variable. The coefficient estimate on this variable is negative and significant, showing that firms with high disparity between voting rights and cash flow rights perform worse during the crisis period. This result is consistent with the expropriation hypothesis.

The regressions (2) and (3) use beta and previous HPRs as a key explanatory variable, respectively. The results show that the coefficient estimates on these two variables are negative and significant, consistent with both risk and overreaction hypotheses.

In regression (4), we include all three explanatory variables at the same time. We find that the coefficient estimates on all three variables are significant and negative. The adjusted R^2 of the regression is 2%. Note that the adjusted R^2 s of the regressions (1) through (3) range from 0.6% to 1.1% and the sum of the adjusted R^2 s for these three regressions is 2.6%. This indicates that the effects of the three hypotheses are distinct and each hypothesis contributes to the variation of the HPRs, not necessarily one hypothesis

dominates the others.

In regression (5), we control for other variables. We add the logarithm of total assets, total debt over total assets, top 30 chaebol dummy, equity ownership by foreign investors, ADR dummy, the ratio of financial investments in affiliated firms to total assets, the ratio of financial investments in unaffiliated firms to total assets, Tobin's q , and the ratio of cash flow to total assets. We also include four industry dummy variables (construction, manufacturing, wholesale and retail, and transportation and services) to control for a possible industry effect. To conserve space, we do not report coefficients on these industry dummies. Controlling for these variables increases the adjusted R^2 of the regression to 9%, suggesting that they capture the variation of the holding period returns during the crisis with success. Adding control variables does not affect the significance of the disparity variable. Although the t -statistic of the coefficient estimate on beta drops to -1.66, it is still significant at the 10% level. However, the coefficient estimate on previous HPR loses its significance.

Among the control variables, as expected, the leverage variable is negatively and significantly related to HPR during the shock period. The coefficient estimate on the chaebol dummy is positive and significant at the 1% level, suggesting that firms belonging to business groups are better able to overcome a financial crisis.

We now turn to the regression analyses for the recovery period. Regression (6) runs a simple regression of holding period returns during the recovery period on the disparity variable. The expropriation hypothesis predicts a positive coefficient on this variable, while the information hypothesis predicts a negative coefficient (or statistically insignificant coefficient). The result shows that the coefficient estimate on the disparity variable is negative and significant at the 1% level, supporting the expropriation hypothesis.

The next model examines the risk hypothesis. During the recovery period, the market performed well so that high beta stocks should have better performance on average than low beta stocks. Consistent with this view, we find that the coefficient estimate on the beta is positive and significant.

In regression (8), we examine the overreaction hypothesis. According to the overreaction hypothesis, firms whose stocks drop more in the shock period bounce back more in the recovery period, predicting the negative association between the shock period return and the recovery period return. Supporting the overreaction hypothesis, we find that the coefficient estimate on the shock period return is negative and significant at the 1% level. The adjusted R^2 s for regressions (6) through (8) range from 1.7% to 4.4%.

In regression (9), we include disparity, beta, and previous HPRs to gauge the relative importance of each of the three hypotheses. We find that the coefficient estimates on all three variables are significant, with predicted signs. Further, the magnitude and significance levels are quite close to those obtained when each variable is separately included in the regression. The adjusted R^2 also increases to 9.7%, which is close to the sum of R^2 s obtained from regressions (6) through (8). These results suggest that expropriation, risk, and overreaction have their own merits in explaining the cross-sectional variation of HPRs during the recovery period.

In the last regression, we control for other variables. Adding the control variables does not change the magnitude and significance levels of our key variables.

In Table V, we use equity ownership by controlling shareholders as a key measure of corporate governance. In regression (1), we replace the disparity variable in regression (1) of Table IV with equity ownership by controlling shareholders. Consistent with the expropriation hypothesis, we find that the coefficient estimate on equity ownership by controlling shareholders is positive and significant.

In the next model, we add beta and previous HPRs. All three variables have predicted signs and they are all significant. Beta and previous HPRs are negatively related to HPRs during the shock period. In contrast, equity ownership by controlling shareholders is positively related to HPRs during the shock period.

In regression (3), we include the control variables used in Table IV. Adding the control variables does not change the significance of these three variables except that the coefficient estimate on beta loses its significance.

The next three regressions show the results for the recovery period. The results are remarkably similar to those reported in models (6), (9), and (10) of Table IV. In particular, the coefficient estimates on equity ownership by controlling shareholders are negative and significant, affirming the expropriation hypothesis.

III. Sensitivity tests

A. Alternative measures of risk and overreaction

In this section, we check the robustness of our results for the risk and overreaction hypotheses by including alternative measures of risk and overreaction. Table VI shows the results using residual variance, stock volatility (standard deviation of prior daily stock returns), and earnings volatility (standard deviation of prior net incomes) as alternative measures of risk. As dependent variable, regressions (1) through (6) use the HPRs during the shock period, and regressions (7) through (12) use the HPRs during the recovery period.

The results show that residual variance and total risk are negatively related to the HPRs during the shock period when other variables are not controlled for. However, when we control for other variables used in Table IV and include the two variables that proxy for expropriation (the logarithm of the ratio of voting rights to cash flow rights) and overreaction (previous HPRs) in regressions (4) through (6), none of the risk variables are significant. In contrast, the coefficient on the logarithm of the ratio of voting rights to cash flow rights is negative and significant in regressions (4) through (6).

In regressions of (7) through (12), we find that none of the risk variables are significant except for earnings volatility in regression (9). However, the expropriation variable is positive and significant in regressions (10) through (12), suggesting that firms with weaker governance realize larger gains during the recovery period. Thus, our results are more consistent with the expropriation hypothesis than with the risk hypothesis.

In Table VII we show the results using market to book and price-earnings ratios as alternative measures of overreaction. We exclude firms with negative book value of equity or those with negative earnings from the analysis. As dependent variable, regressions (1) through (4) use the HPRs during the shock period, and regressions (5) through (8) use the HPRs during the recovery period.

In all regressions, the coefficients on market to book ratio and price-earnings ratio are not significant.³ However, we find that the coefficients on the logarithm of the ratio of voting rights to cash flow rights are negative in the shock period and positive in the recovery period, further supporting the expropriation hypothesis.

B. Alternative measures of corporate governance

In this section, we further examine the expropriation hypothesis using various alternative measures of corporate governance. In regressions (1) and (2) of Table VIII, we use the sum of block holdings by all shareholders owning 5% or more of issued shares as a measure of good governance. Unlike small shareholders who like to free-ride the corporate governance activities of other shareholders (Grossman and Hart (1980)), large shareholders have strong incentives to monitor managerial performance and take actions that enhance firm value (Shleifer and Vishny (1986)). To the extent that blockholders play an important role in disciplining corporate managers, they reduce owner-managers' incentives to expropriate minority shareholders. Thus, one would expect a positive relation between block ownership and firm performance during the shock period, and a negative relation during the recovery period. The results show evidence that is consistent with these predictions of the expropriation hypothesis. In regression (1), which uses the HPRs during the shock period as the dependent variable, the coefficient on block ownership is positive and

³ It could be that our alternative proxy variables for overreaction do not capture overreaction on the part of investors, but simply reflect a firm's stock performance. Alternatively, since we exclude firms with negative book value of equity or those with negative earnings from the sample, poorly performing firms are not included in the analysis. This

significant at the 5% level. In contrast, in regression (2), which uses the HPRs during the recovery period as the dependent variable, the coefficient on block ownership is negative and significant at the 5% level. These results are consistent with the prediction of expropriation hypothesis.

In the next two regressions, we replace the sum of block ownership by all shareholders with the largest managerial block ownership and the largest non-managerial block ownership. We find that the results for largest managerial block ownership are similar to those for the sum of block ownership by all shareholders. However, the coefficients on the largest non-managerial block ownership are not significant.

In regressions (5) and (8), we use the extent of a firm's diversification as a measure of corporate governance. The results show that during the shock period the interaction term between the diversification dummy variable and high variation in investment opportunity adversely affects firm value (regressions (5) and (7)). However, the coefficient on this interaction variable becomes positive and significant during the recovery period (regressions (6) and (8)). These results again support the expropriation hypothesis.

C. Alternative choice of shock and recovery period

Based on the stock market performance, in the previous analysis, we set the crisis period from July 1997 to September 1998 and the recovery period from October 1998 to December 1999. In this section, we examine if our results are sensitive to the choice of alternative crisis and recovery periods. As an alternative crisis period, we set it starting from as early as January 1997. There were some symptoms of crisis starting from early 1997. For example, in January 1997, the Hanbo business group, one of the fastest growing business groups in Korea, announced its default, triggering the financial crisis in the Korean economy. Thus, we assume that the crisis started as early as January 1997. The stock market index reached its bottom of 404 in June 1998. The market went through a mild recovery and then again went down to hit the bottom of 406 in September 1998. We, therefore, assume that the crisis period ended in June 1998 and the reversal started

reduces the cross-sectional variation of market to book and price-earnings ratios, making the analysis less powerful.

from July 1998.

Table IX reports the results using alternative periods of shock and recovery. We find that the results in Table IX are remarkably similar to those in Table IV. The coefficient estimates on the expropriation variable and their significance levels are almost same in two tables. For instance, the coefficient estimate on the logarithm of the ratio of voting rights to cash flow rights and its t -statistic in model (1) of Table IV is -0.035 and 2.48, respectively. The corresponding numbers for the same variable in Table IX are -0.033 and 2.36, respectively. Other regressions show similar results.

IV. Further Evidence on Expropriation Hypothesis

A. Effects of corporate governance on accounting profitability

The expropriation hypothesis suggests that increased expropriation risk brought by sharp declines in investment opportunities during the crisis period is the main cause of the drop in stock price for firms with poor corporate governance. It also suggests that reduced expropriation risk during the recovery period is the main cause of larger rebound in stock price for firms with poor corporate governance. Increased (reduced) expropriation risk can affect firm value through two channels: An increase (decrease) in risk premium to discount future cash flows and a decrease (increase) in future cash flows that are expected to be distributed to investors. In this section, we address the latter implication of the expropriation hypothesis by examining whether poorly governed firms experience a decrease in cash flows during the shock period and an increase in cash flows during the recovery period. We use the changes in net income as a proxy for the changes in cash flows. For the shock period, we use as the dependent variable the ratio of the change in net income from 1997 to 1998 to total assets in 1997. For the recovery period, we use as the dependent variable the ratio of the change in net income from 1998 to 1999 to total assets in 1998. Independent variables are those used in Tables IV and VII.

The results are reported in Table X. Regressions (1) through (4) use the change in net income during the shock period as the dependent variable. In regression (1), we include the disparity variable as an explanatory variable. The coefficient estimate on the disparity variable is negative and significant at the 5% level. The regression (2) adds various control variables used in Table IV. Adding the control variables does not affect the magnitude and significance level of the disparity variable. Interestingly, the results for the regression estimates of the leverage variables and the dummy for top 30 chaebol are remarkably similar to those shown in the model (5) of Table IV, in which we use HPRs during the shock period as the dependent variable. These results are consistent with those of Joh (2002).

The next two regressions replace the disparity variable with the equity ownership by controlling shareholders. The coefficient estimates on the equity ownership by controlling shareholders are positive and significant at the 1% level.

Regressions (5) through (8) use the change in net income during the recovery period as the dependent variable. In regressions (5) and (6), we find that the coefficient estimates on the disparity variable are positive and significant. In regressions (7) and (8), we find negative and significant estimates on the equity ownership by controlling shareholders.

Overall, these results are consistent with the predictions of the expropriation hypothesis and further suggest that the expropriation of minority shareholders is the key determinant for explaining the link between corporate governance and firm value.

B. Endogenous issue and event study

The advantage of focusing on the crisis period is that it allows us to examine unambiguously the effect of corporate governance on firm value. In other words, since the Asian financial crisis represents an exogenous shock to the economy and we use a given set of measures for corporate governance immediately before the external shock to explain changes in firm value, we can largely eliminate any spurious causality

caused by the endogeneity problem. However, the effect of corporate governance on firm values during the recovery period is not free from the endogeneity problem. For example, it could be that firms adapt their governance structures in a way that they fit better in a recovering economy. In other words, firms may have changed their governance structures in response to the rapidly changing market environment and the causality runs from the changing economic environment to governance. Thus, our findings that poorly governed firms experience larger increase in their share values during the recovery period may be subject to other interpretations.

To address the possible endogeneity issue, we consider other exogenous events during the period of 1997-1998 and examine the relation between the change in firm value due to such events and a set of governance variables at the fiscal year-end that immediately precedes the announcement date of events. During the period of 1997-1998, we select ten bad-news events that signal deteriorating investment opportunities in the future economy and thus are likely to provide controlling shareholders strong incentives to expropriate. We also select eight good-news events that are associated with brighter prospect for future investment opportunities and thus are likely to reduce controlling shareholders' incentives to expropriate. Appendix 1 lists and describes the ten bad-news events as well as the eight good-news events. To the extent that investors are not able to forecast the occurrence of these events, they represent exogenous events and thus provide a natural experiment to test the link between firm value and corporate governance without involving endogeneity issue.

The expropriation hypothesis predicts that abnormal returns at the announcement of bad news are small or negative for poorly governed firms and that abnormal returns at the announcement of good news are large or positive for poorly governed firms. We compute the abnormal return by estimating the market model. We use the KOSPI (Korea Composite Stock Price Index) return as the benchmark. We obtain our estimates of the market model by using 200 trading days of return data ending 20 days before the event announcement. Then, we sum the daily abnormal returns to get the cumulative abnormal return (CAR) from day -5 before the announcement date to day +5 after the announcement date.

Table XI shows the results for the fixed effect regression of CARs (-5, 5) on governance and control variables. Specifically, we first compute the CARs for each news event and for each sample firm. We then pool all CARs across firms and events. We use as independent variable the firm characteristics and governance variables at the fiscal year-end that immediately precedes the announcement date of events. That is, we use firm characteristics and governance variables at the fiscal year-end of 1996 (1997) for the events taking place during 1997 (1998). Finally, we add a dummy variable for each event, so that any common movement in a sample firm's CARs would be captured by the fixed effect. We would then have a testable hypothesis that common movements across firms on the same announcement day are statistically significant, by testing the joint hypothesis that all event dummies have zero coefficients.

The first four regressions are for the event of bad news and the last four regressions are for the event of good news. In the first regression, we examine the effect of disparity variable on the announcement returns. The coefficient estimate is negative and significant at the 1% level, consistent with the expropriation hypothesis. In the next regression, we replace the disparity variable with the equity ownership by controlling shareholders. The coefficient estimate is positive and significant at the 1% level. In regression (3), we use the sum of block ownership by all shareholders as a measure of corporate governance. This variable is again positively and significantly related to CARs (-5, 5) at the 1% level. In regression (4), we replace the sum of block ownership with the largest managerial block ownership and the largest non-managerial block ownership. We find that only the coefficient on the largest managerial block ownership is positive and significant at the 5% level.

For good news event in regressions (5) through (8), we find that the signs of the coefficient estimates on governance variables are opposite to those in regressions (1) through (4). With the exception of the disparity variable in regression (5), which is not significant, the coefficient estimates on all other governance variables are negative and significant. Thus, the reported results are robust to the basic check for endogeneity issue.

V. Conclusion

In this paper, using the experience of Korean firms during the post-crisis recovery period, we examine the relative importance of expropriation hypothesis against information, risk, and overreaction hypotheses. We find that poorly governed firms — firms that have high disparity between voting and cash flow rights, those that have low equity ownership by controlling shareholders, those that have low block ownership, and those that are highly diversified — suffer more during the crisis period and rebound more during the recovery period. We also find that bad (good) news in the economy affects firms with weak corporate governance more negatively (positively) than those with good corporate governance. These results are consistent with the expropriation hypothesis, but not consistent with the information hypothesis, which posits that greater investor awareness of weakness in corporate governance is the main force that derives the link between corporate governance and the change in firm value during the crisis period.

However, we find the results that are also in part consistent with risk and overreaction hypotheses. Stock prices of high beta firms perform worse during the crisis period, but rebound more during the recovery period. Similarly, firms whose stock prices drop more during the pre-crisis (crisis) period perform better during the crisis (recovery) period, indicating that the contrarian effects in stock returns play an important role in explaining the cross-sectional variation in firm value during the aftermath of the Korean financial crisis. Controlling for beta and overreaction effects, however, does not reduce the importance of governance variables in explaining the change in firm value.

Overall, these results suggest that controlling shareholders' incentives to expropriate minority shareholders are a key factor that derives a link between corporate governance and firm value during the crisis period.

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Table I
Summary Statistics

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korean Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The summary statistics are the values at the end of fiscal years 1996 and 1997 except for beta, residual variance, and standard deviation of prior returns, which are estimated using one-year daily returns during 1996 and 1997. Earnings volatility is the standard deviation of net income for the previous ten years. Previous HPRs are the holding period returns during the year of 1996 and holding period return during the shock period (9707-9809). Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Equity ownership by controlling shareholders is the sum of equity ownerships by controlling families and affiliated firms. Sum of block ownership is the sum of block holdings by all shareholders owning 5% or more of issued shares. Block ownership by the largest shareholder denotes block holdings by the largest shareholder who owns 5% or more of issued shares. Largest managerial blockholder concentration refers to block holdings by owners involved with management and largest non-managerial blockholder concentration to block holdings by other largest shareholders. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. The firm is considered to be diversified if 10% or less of a firm's sales comes from one three-digit SIC.

Variables	1996 (N=644)		1997 (N=620)	
	Mean	Median	Mean	Median
<i>Expropriation variables:</i>				
Voting rights / cash flow rights of controlling shareholders (owner-managers and their family members)	3.853	1.000	2.152	1.000
Cash flow rights of controlling shareholders (%)	21.797	21.770	24.652	24.620
Voting rights of controlling shareholders (%)	24.833	24.510	29.389	28.020
Equity ownership by controlling shareholders (%)	29.244	28.090	33.124	30.805
By owner-managers and their family members	20.241	20.020	20.568	21.250
By affiliated firms	9.002	0.000	12.556	5.755
Sum of block ownership by all shareholders (%)	30.940	29.580	39.659	30.860
Block ownership by the largest shareholder (%)	18.945	16.915	21.405	20.520
By managers	11.195	9.440	12.472	11.000
By non-managers	7.750	8.700	9.933	6.560
Equity ownership by foreign investors (%)	4.820	1.490	4.599	0.901
<i>Risk variables</i>				
Market model Beta	0.851	0.915	0.896	0.940
Market model residual variance	0.071	0.068	0.146	0.122
Standard deviation of prior one-year daily returns	2.825	2.800	4.076	4.053
Earnings volatility	20.969	0.170	21.561	0.165
<i>Overreaction variables</i>				
Previous HPRs	0.174	0.035	-0.696	-0.753

Variables	1996 (N=644)		1997 (N=620)	
	Mean	Median	Mean	Median
Market to book ratio	1.440	0.953	0.973	0.481
Price to earnings ratio	33.878	18.340	23.827	10.570
<i>Other firm characteristics:</i>				
Total assets (billion won)	610.834	156.781	858.632	182.271
Total debt / total assets	0.721	0.699	0.746	0.720
Cash flow (operating income + depreciation) / total assets	0.052	0.054	0.048	0.052
Tobin's q	1.099	0.997	0.957	0.892
Financial investment in affiliated firms / total assets	0.089	0.047	0.069	0.040
Financial investment in unaffiliated firms / total asset	0.034	0.000	0.019	0.001
Percentage of firms with an ADR		2.33		2.64
Percentage of diversified firms		32.66		29.70

Table II
Correlations among Expropriation, Risk, and Overreaction Variables

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korean Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The ownership structures are the values at the end of fiscal years 1996 and 1997. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Equity ownership by controlling shareholders is the sum of equity ownerships by controlling families and affiliated firms. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A: Correlation during the shock period (9707-9809)

	Logarithm (voting right / cash flow right)	Equity ownership by controlling shareholders (owner-managers and their family members)	Beta	Previous HPR
Logarithm (voting right / cash flow right)	1.000			
Equity ownership by controlling shareholders	-0.396*** (0.00)	1.000		
Beta	0.114*** (0.01)	-0.209*** (0.00)	1.000	
Previous HPR	-0.087** (0.04)	0.064 (0.12)	-0.078* (0.06)	1.000

Panel B: Correlation during the recovery period (9810-9912)

	Logarithm (voting right / cash flow right)	Equity ownership by controlling shareholders (owner-managers and their family members)	Beta	Previous HPR
Logarithm (voting right / cash flow right)	1.000			
Equity ownership by controlling shareholders	-0.540*** (0.00)	1.000		
Beta	0.143*** (0.00)	-0.135*** (0.00)	1.000	
Previous HPR	-0.116*** (0.00)	0.127*** (0.00)	-0.110*** (0.01)	1.000

Table III
Mean and Median Holding Period Returns (HPR) during the Crisis (9707-9809) and Recovery (9810-9912) Periods

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korean Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The ownership structures are the values at the end of fiscal years 1996 and 1997. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Equity ownership by controlling shareholders is the sum of equity ownerships by owner-managers and their family members. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A: HPRs by disparity variable				
	Disparity between cash flow rights and control rights (voting right / cash flow right)		Test of difference: <i>p</i> -value	
	Low	High	t-test	Wilcoxon Z-test
HPR (9707~9809)	-0.681 (-0.743)	-0.723 (-0.784)	0.07*	0.09*
HPR (9810~9912)	0.965 (0.470)	1.671 (0.867)	0.00***	0.00***

Panel B: HPRs by equity ownership by controlling shareholders				
	Equity ownership by controlling shareholders		Test of difference: <i>p</i> -value	
	Low	High	t-test	Wilcoxon Z-test
HPR (9707~9809)	-0.729 (-0.800)	-0.663 (-0.717)	0.00***	0.00***
HPR (9810~9912)	1.647 (0.789)	0.957 (0.464)	0.00***	0.00***

Panel C: HPRs by beta				
	Beta		Test of difference: <i>p</i> -value	
	Low	High	t-test	Wilcoxon Z-test
HPR (9707~9809)	-0.647 (-0.732)	-0.740 (-0.785)	0.00***	0.00***
HPR (9810~9912)	1.099 (0.592)	1.456 (0.642)	0.09*	0.27

Panel D: HPRs by previous HPRs				
	Previous HPR		Test of difference: <i>p</i> -value	
	Low	High	t-test	Wilcoxon Z-test
HPR (9707~9809)	-0.702 (-0.784)	-0.690 (-0.743)	0.61	0.19
HPR (9810~9912)	1.766 (1.017)	0.804 (0.337)	0.00***	0.00***

Table IV
Cross-Sectional Regression of Holding Period Returns (HPR) on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korea Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from July 1997 to September 1998 and the recovery period is from October 1998 to December 1999. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	HPR (9707~9809)					HPR (9810~9912)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intercept	-0.684*** (-54.25)	-0.599*** (-18.71)	-0.690*** (-59.76)	-0.580*** (-17.05)	0.056 (0.19)	1.004*** (8.66)	-0.058 (-0.14)	-0.103 (-0.36)	-1.353*** (2.90)	0.994 (0.39)
Logarithm (voting right / cash flow right)	-0.035** (-2.48)			-0.025 (-1.64)*	-0.035** (-2.03)	0.917*** (5.37)			0.843*** (4.92)	0.893*** (4.15)
Beta		-0.098*** (-2.79)		-0.105*** (-2.82)	-0.074* (-1.66)		1.475*** (3.36)		1.118*** (2.62)	1.104** (2.04)
Previous HPR			-0.038** (-2.08)	-0.037* (-1.81)	-0.035 (-1.43)			-1.995*** (-5.28)	-1.962*** (-5.20)	-1.873*** (-4.25)
Logarithm (total assets)					-0.023 (-1.65)					0.014 (0.11)
Total debt / total assets					-0.194*** (-2.83)					0.825 (1.30)
Top 30 chaebol dummy					0.119*** (3.28)					-0.374 (-1.03)
Equity ownership by foreign investors					0.307 (1.51)					0.033** (2.04)
ADR dummy					0.138 (1.51)					0.694 (0.97)
Financial investment in affiliated firms / total assets					-0.198 (-1.32)					-3.443** (-2.34)
Financial investment in non-affiliated firms / total assets					-0.087 (-0.52)					3.752** (2.18)
Tobin's q					0.007 (0.17)					-0.634 (-1.13)
Cash flow / total assets					0.332					-0.581

Variables	HPR (9707~9809)					HPR (9810~9912)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					(1.10)					(-0.33)
Industry dummies					Yes					Yes
F-value	6.13	7.80	4.33	4.61	3.86	28.79	11.27	27.90	21.64	5.42
Adjusted R ²	0.009	0.011	0.006	0.020	0.090	0.044	0.017	0.043	0.097	0.119
Sample size	557	567	603	526	434	602	584	603	583	490

Table V
Cross-Sectional Regression of Holding Period Returns (HPR) on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korea Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from July 1997 to September 1998 and the recovery period is from October 1998 to December 1999. Equity ownership by controlling shareholders is the sum of equity ownerships by owner-managers and their family members. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	HPR (9707~9809)			HPR (9810~9912)		
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-0.744*** (-41.54)	-0.640*** (-16.39)	-0.081 (-0.28)	1.888*** (10.59)	-0.406 (-0.76)	2.430 (0.92)
Equity ownership by controlling shareholders	0.002*** (3.31)	0.002** (2.17)	0.003*** (2.67)	-0.032*** (-4.48)	-0.027*** (-3.85)	-0.032*** (-3.23)
Beta		-0.082** (-2.27)	-0.046 (-1.05)		1.031** (2.26)	1.230** (2.21)
Previous HPR		-0.039** (-2.00)	-0.040* (-1.74)		-1.850*** (-4.78)	-1.810*** (-4.04)
Logarithm (total assets)			-0.023* (-1.78)			0.015 (0.12)
Total debt / total assets			-0.187*** (-2.86)			0.424 (0.61)
Top 30 chaebol dummy			0.101*** (2.93)			0.060 (0.17)
Equity ownership by foreign investors			0.295* (1.69)			0.032* (1.89)
Equity ownership by affiliated firms			0.002* (1.72)			-0.005 (-0.57)
ADR dummy			0.178** (2.23)			0.378 (0.51)
Financial investment in affiliated firms / total assets			-0.161 (-1.14)			-4.030*** (-2.69)
Financial investment in non-affiliated firms / total assets			-0.101 (-0.66)			4.791*** (2.77)
Tobin's q			0.005 (0.13)			-0.434 (-0.64)
Cash flow / total assets						0.368 (-0.357)

Variables	HPR (9707~9809)			HPR (9810~9912)		
	(1)	(2)	(3)	(4)	(5)	(6)
			(1.34)			(-0.20)
Industry dummies			Yes			Yes
F-value	10.95	4.95	4.47	20.12	16.42	4.68
Adjusted R ²	0.016	0.021	0.107	0.033	0.076	0.108
Sample size	598	563	466	567	567	486

Table VI
Cross-Sectional Regression of Holding Period Returns (HPR) on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables:
Using Alternative Measures of Risk

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korean Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from July 1997 to September 1998 and the recovery period is from October 1998 to December 1999. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Market model residual variance and standard deviation of prior stock returns are estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Earnings volatility is the standard deviation of net income for the previous ten years. Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. .
***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	HPR (9707~9809)						HPR (9810~9912)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Intercept	-0.440*** (-3.86)	-0.370*** (-3.08)	-0.562*** (-5.87)	0.059 (0.17)	0.183 (0.47)	0.084 (0.29)	4.142*** (4.21)	3.094** (2.50)	3.888*** (4.29)	0.814 (0.28)	-1.649 (0.47)	1.808 (0.69)
Market model residual variance	-0.714* (-1.91)			0.015 (0.03)			-0.090 (-0.23)			1.029 (0.35)		
Standard deviation of prior stock returns.		-0.055** (-2.52)			-0.034 (-0.98)			0.204 (1.00)			0.306 (1.04)	
Earning volatility			-0.007 (-0.54)			-0.009 (-0.59)			0.211* (1.82)			0.110 (0.90)
Logarithm (voting right / cash flow right)				-0.037** (-2.16)	-0.037** (-2.34)	-0.044*** (-2.78)				0.896*** (4.15)	0.939*** (4.17)	0.919*** (4.26)
Previous HPR				-0.034 (-1.40)	-0.033 (-1.43)	-0.040* (-1.72)				-1.928*** (-4.34)	-1.941*** (-4.19)	-1.932*** (-4.36)
Logarithm (total assets)				-0.028* (-1.79)	-0.031** (-1.98)	-0.031** (-2.29)				0.080 (0.59)	0.146 (1.04)	0.035 (0.29)
Total debt / total assets				-0.187*** (-2.61)	-0.219*** (-3.26)	-0.199*** (-3.02)				0.661 (1.01)	0.579 (0.79)	0.703 (1.10)
Top 30 chaebol dummy				0.123*** (3.39)	0.112*** (3.24)	0.131*** (3.71)				-0.347 (-0.95)	-0.422 (-1.09)	-0.348 (-0.95)
Equity ownership by foreign investors				0.352* (1.73)	0.292 (1.45)	0.434** (2.17)				0.031* (1.87)	0.033* (1.91)	0.028* (1.70)
ADR dummy				0.140 (1.52)	0.155* (1.78)	0.167* (1.80)				0.777 (1.04)	0.928 (1.18)	0.608 (0.84)

Variables	HPR (9707~9809)						HPR (9810~9912)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Financial investment in affiliated firms / total assets				-0.223 (-1.48)	-0.202 (-1.47)	-0.218 (-1.59)				-3.458** (-2.34)	-3.081* (-1.87)	-3.492** (-2.36)
Financial investment in non-affiliated firms / total assets				-0.087 (-0.52)	-0.084 (-0.53)	-0.067 (-0.41)				3.516** (2.03)	3.418* (1.83)	3.527** (2.04)
Tobin's q				0.017 (0.43)	0.054 (1.13)	0.025 (0.65)				-0.739 (-1.31)	-0.622 (-1.06)	-0.756 (-1.34)
Cash flow / total assets				0.336 (1.09)	0.168 (0.64)	0.267 (1.02)				0.025 (0.01)	-0.799 (-0.35)	-0.002 (-0.01)
Industry dummies				Yes	Yes	Yes				Yes	Yes	Yes
F-value	4.91	5.64	3.77	3.65	4.21	4.62	3.06	3.10	3.73	5.17	5.30	5.15
Adjusted R ²	0.027	0.032	0.018	0.084	0.090	0.106	0.014	0.015	0.018	0.114	0.123	0.113
Sample size	568	558	604	435	427	459	573	553	603	490	462	490

Table VII
Cross-Sectional Regression of Holding Period Returns (HPR) on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables:
Using Alternative Measures of Overreaction

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korean Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from July 1997 to September 1998 and the recovery period is from October 1998 to December 1999. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	HPR (9707~9809)				HPR (9810~9912)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.526*** (-5.06)	-0.522** (-4.56)	-0.102 (-0.34)	-0.153 (-0.43)	3.957*** (4.21)	2.814** (2.37)	0.514 (0.19)	-0.223 (-0.07)
Market to book ratio	-0.001 (-0.12)		0.011 (1.56)		-0.049 (-1.30)		-0.064 (-1.30)	
Price-earnings ratio		-0.001 (-1.49)		-0.001 (-0.80)		-0.002 (-1.06)		-0.001 (-0.44)
Logarithm (voting right / cash flow right)			-0.034* (-1.93)	-0.052*** (-2.65)			0.935*** (4.08)	0.857*** (3.15)
Beta			-0.055 (-1.20)	-0.047 (-0.91)			1.491** (2.56)	0.480 (0.71)
Logarithm (total assets)			-0.005 (-0.34)	-0.004 (-0.22)			0.050 (0.36)	0.140 (0.92)
Total debt / total assets			-0.447*** (-4.23)	-0.417*** (-3.64)			1.437 (1.50)	0.111 (0.10)
Top 30 chaebol dummy			0.127*** (3.48)	0.138*** (3.29)			-0.440 (-1.10)	-0.170 (-0.38)
Equity ownership by foreign investors			0.212 (1.02)	0.157 (0.71)			0.024 (1.38)	0.014 (0.73)
ADR dummy			0.085 (0.92)	0.086 (0.88)			0.522 (0.70)	0.703 (0.92)
Financial investment in affiliated firms / total assets			-0.164 (-1.08)	-0.303* (-1.72)			-3.543** (-2.20)	-3.540** (-2.06)
Financial investment in non-affiliated firms / total assets			-0.251 (-1.22)	-0.192 (-0.87)			5.849** (2.42)	4.433 (1.54)
Tobin's q			-0.050	-0.006			-0.505	-1.143*

Variables	HPR (9707~9809)				HPR (9810~9912)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			(-1.07)	(-0.12)			(-0.81)	(-1.89)
Cash flow / total assets			0.578*	0.561			-3.736*	-1.745
			(1.77)	(1.34)			(-1.69)	(-0.56)
Industry dummies			Yes	Yes			Yes	Yes
F-value	3.54	3.52	4.31	3.82	3.02	2.25	4.11	2.68
Adjusted R ²	0.017	0.021	0.105	0.108	0.015	0.013	0.092	0.070
Sample size	576	478	424	352	548	394	463	334

Table VIII
Cross-Sectional Regression of Holding Period Returns (HPR) on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables:
Using Alternative Measures of Ownership Structure

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korea Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from July 1997 to September 1998 and the recovery period is from October 1998 to December 1999. Sum of block ownership is the sum of block holdings by all shareholders owning 5% or more of issued shares. Largest managerial blockholder concentration refers to block holdings by owners involved with management and largest non-managerial blockholder concentration to block holdings by other largest shareholders. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Equity ownership by controlling shareholders is the sum of equity ownerships by owner-managers and their family members. Diversification dummy takes the value of zero if 90% or more of a firm's sales come from one three-digit SIC. Firms are classified as having high (low) variation if the standard deviation of the Tobin's Q ratios of matched non-diversified firms for all segments of a diversified firm is above (below) the median for all diversified firms. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HPR (9707-9809)	HPR (9810-9912)	HPR (9707-9809)	HPR (9810-9912)	HPR (9707-9809)	HPR (9810-9912)	HPR (9707-9809)	HPR (9810-9912)
Intercept	-0.068 (-0.24)	1.947 (0.74)	-0.151 (-0.52)	3.089 (1.16)	0.005 (0.02)	0.875 (0.35)	-0.111 (-0.38)	2.332 (0.88)
Sum of block ownership by all shareholders	0.233** (2.59)	-1.672** (-2.12)						
Largest managerial block ownership			0.478*** (3.48)	-4.167*** (-3.07)				
Largest non-managerial block ownership			0.186 (1.47)	-1.202 (-1.03)				
Logarithm (voting right / cash flow right)					-0.035** (-2.01)	0.948*** (4.44)		
Equity ownership by controlling shareholders							0.003*** (2.69)	-0.033*** (-3.44)
Diversification * High variation					-0.093** (-2.25)	0.784*** (2.63)	-0.089** (-2.21)	0.779*** (2.59)
Diversification * Low variation					-0.023 (-0.74)	0.182 (0.48)	-0.012 (-0.38)	0.171 (0.45)
Beta	-0.038 (-0.87)	1.035* (1.85)	-0.051 (-1.19)	1.120** (2.02)	-0.071 (-1.60)	1.208** (2.24)	-0.044 (-0.99)	1.385** (2.50)
Previous HPR	-0.039*	-1.844***	-0.040*	-1.843***	-0.035	-1.789***	-0.042*	-1.731***

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	HPR (9707-9809)	HPR (9810-9912)	HPR (9707-9809)	HPR (9810-9912)	HPR (9707-9809)	HPR (9810-9912)	HPR (9707-9809)	HPR (9810-9912)
	(-1.68)	(-4.10)	(-1.73)	(-4.13)	(-1.45)	(-4.07)	(-1.82)	(-3.87)
Logarithm (total assets)	-0.020 (-1.51)	0.031 (0.25)	-0.018 (-1.32)	-0.009 (-0.07)	-0.022 (-1.56)	0.014 (0.12)	-0.023* (-1.76)	0.015 (0.12)
Total debt / total assets	-0.196*** (-3.00)	0.550 (0.86)	-0.199*** (-3.07)	0.574 (0.90)	-0.203*** (-2.95)	0.691 (1.10)	-0.197*** (-3.01)	0.245 (0.36)
Top 30 chaebol dummy	0.085*** (2.62)	0.352 (1.07)	0.109*** (3.30)	0.150 (0.45)	0.115*** (3.17)	-0.588 (-1.61)	0.098*** (2.82)	-0.111 (-0.32)
Equity ownership by foreign investors	0.268 (1.54)	0.036** (2.17)	0.314* (1.81)	0.031* (1.86)	0.299 (1.46)	0.034** (2.13)	0.286 (1.63)	0.034** (2.01)
Equity ownership by affiliated firms							0.002* (1.69)	-0.005 (-0.53)
ADR dummy	0.158** (2.00)	0.386 (0.53)	0.164** (2.07)	0.391 (0.54)	0.140 (1.53)	0.731 (1.03)	0.182** (2.27)	0.373 (0.51)
Financial investment in affiliated firms / total assets	-0.199 (-1.41)	-3.471** (-2.31)	-0.138 (-0.97)	-3.917*** (-2.60)	-0.190 (-1.27)	-3.306** (-2.26)	-0.154 (-1.09)	-3.944*** (-2.66)
Financial investment in non-affiliated firms / total assets	-0.058 (-0.38)	4.394** (2.52)	-0.077 (-0.51)	4.561*** (2.62)	-0.071 (-0.42)	3.342* (1.95)	-0.089 (-0.58)	4.483*** (2.61)
Tobin's q	-0.011 (-0.27)	-0.577 (-1.01)	0.001 (0.03)	-0.662 (-1.16)	0.030 (0.73)	-0.491 (-0.87)	0.029 (0.73)	-0.236 (-0.35)
Cash flow / total assets	0.323 (1.18)	-0.270 (-0.15)	0.290 (1.06)	-0.337 (-0.19)	0.333 (1.10)	-0.611 (-0.36)	0.362 (1.31)	-0.374 (-0.21)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-value	4.65	4.47	4.72	5.54	3.72	5.27	4.26	4.62
Adjusted R ²	0.107	0.097	0.115	0.104	0.097	0.130	0.113	0.120
Sample size	459	487	458	487	432	485	463	481

Table IX
Cross-Sectional Regression of Holding Period Returns (HPR) on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables:
Using Alternative Choice of Shock and Recovery Periods

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korea Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from January 1997 to June 1998 and the recovery period is from July 1998 to December 1999. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Beta is estimated using one-year daily returns during 1996 (for the shock period) and 1997 (for the recovery period). Previous HPRs are the holding period returns during the year of 1996 (for the shock period) and holding period return during 9707-9809 (for the recovery period). Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	HPR (9701~9806)					HPR (9807~9912)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intercept	-0.699*** (-55.99)	-0.621*** (-19.44)	-0.703*** (-61.35)	-0.605*** (-17.82)	-0.351 (-1.17)	1.050*** (10.86)	0.424 (1.22)	0.033 (0.14)	-0.771** (-1.97)	-0.036 (-0.02)
Logarithm (voting right / cash flow right)	-0.033** (-2.36)			-0.025 (-1.65)*	-0.029* (-1.73)	0.822*** (5.77)			0.787*** (5.51)	0.762*** (4.25)
Beta		-0.087*** (-2.49)		-0.095*** (-2.57)	-0.079* (-1.81)		0.960*** (2.60)		0.618* (1.74)	0.514 (1.13)
Previous HPR			-0.027 (-1.48)	-0.024 (-1.17)	-0.009 (-0.38)			-1.794*** (-5.65)	-1.789*** (-5.64)	-1.695*** (-4.56)
Logarithm (total assets)					-0.007 (-0.47)					0.041 (0.41)
Total debt / total assets					-0.163** (-2.40)					1.026* (1.93)
Top 30 chaebol dummy					0.105*** (2.94)					-0.198 (-0.65)
Equity ownership by foreign investors					0.275 (1.36)					0.027** (2.00)
ADR dummy					0.140 (1.55)					0.370 (0.62)
Financial investment in affiliated firms / total assets					-0.156 (-1.05)					-3.416*** (-2.78)
Financial investment in non-affiliated firms / total assets					-0.075 (-0.45)					2.996** (2.08)
Tobin's q					0.003 (0.07)					-0.622 (-1.32)

Variables	HPR (9701~9806)					HPR (9807~9912)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Cash flow / total assets					0.288 (0.96)					-0.613 (-0.43)
Industry dummies					Yes					Yes
F-value	5.56	6.14	2.20	3.68	3.36	33.24	6.76	31.89	23.42	5.94
Adjusted R ²	0.008	0.009	0.002	0.015	0.076	0.051	0.010	0.049	0.104	0.132
Sample size	557	567	603	526	434	602	584	603	583	490

Table X
Cross-Sectional Regression of Change in Net Income on the Expropriation, Risk, Overreaction, and Firm Characteristic Variables

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korea Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. The crisis period is from July 1997 to September 1998 and the recovery period is from October 1998 to December 1999. Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Equity ownership by controlling shareholders is the sum of equity ownerships by owner-managers and their family members. Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	Change in net income from 1997 to 1998 / total assts in 1997				Change in net income from 1998 to 2000 / total assts in 1998			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.062** (-2.48)	0.527 (1.15)	-0.191*** (-5.24)	0.057 (0.13)	0.107*** (5.12)	-0.281 (-0.67)	0.188*** (6.33)	-0.084 (-0.19)
Logarithm (voting right / cash flow right)	-0.068** (-2.33)	-0.088*** (-3.27)			0.075** (2.39)	0.105*** (2.87)		
Equity ownership by controlling shareholders			0.005*** (3.70)	0.008*** (5.08)			-0.004*** (-3.07)	-0.004*** (-2.67)
Logarithm (total asset)		-0.015 (-0.67)		-0.011 (-0.55)		-0.001 (-0.07)		0.002 (0.08)
Total debt / total assets		-0.213* (-1.72)		-0.107 (-0.92)		0.395*** (3.64)		0.322*** (2.82)
Top 30 chaebol dummy		0.168*** (2.87)		0.113** (2.01)		-0.093 (-1.50)		-0.042 (-0.70)
Equity ownership by foreign investors		0.493 (1.52)		0.563* (1.95)		-0.002 (-0.73)		-0.003 (-0.96)
Equity ownership by affiliated firms				0.005*** (3.22)				-0.001 (-0.75)
ADR dummy		0.024 (0.15)		-0.008 (-0.06)		0.126 (1.04)		0.092 (0.74)
Financial investment in affiliated firms / total assets		0.208 (0.82)		0.379 (1.60)		0.415 (1.63)		0.353 (1.37)
Financial investment in non-affiliated firms / total asset		-1.842*** (-3.22)		-1.802*** (-3.31)		0.080 (0.23)		0.319 (0.93)
Tobin's q		-0.032 (-0.51)		-0.023 (-0.38)		-0.045 (-0.49)		-0.057 (-0.53)
Cash flow / total assets		0.435 (1.02)		0.368 (0.94)		-0.713** (-2.38)		-0.682** (-2.25)
Industry dummies		Yes		Yes		Yes		Yes

Variables	Change in net income from 1997 to 1998 / total assts in 1997				Change in net income from 1998 to 2000 / total assts in 1998			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
F-value	5.42	3.44	13.71	4.51	5.70	4.06	9.43	3.54
Adjusted R ²	0.008	0.069	0.022	0.098	0.008	0.080	0.016	0.072
Sample size	524	428	561	457	569	461	536	457

Table XI
Fixed-Effect Regression of Cumulative Abnormal Returns (CARs) on Expropriation, Risk, Overreaction, and Firm Characteristic Variables

The sample includes non-financial firms listed on the Korean Stock Exchange (KSE) during 1997-1998. Financial data are obtained from the Listed Company Database of the Korea Listed Companies Association. The stock price data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute. During the period of 1997-1998, ten bad-news events that signal deteriorating investment opportunities in the future economy and eight good-news events that are associated with brighter prospect for future investment opportunities are selected as the sample events. See Appendix 1 for the list of these events. The abnormal announcement return is computed by estimating the market model. The KOSPI (Korea Composite Stock Price Index) return is used as the benchmark. The market model is estimated by using 200 trading days of return data ending 20 days before the event announcement. Then, the daily abnormal returns are accumulated to get the cumulative abnormal return (CAR) from day -5 before the announcement date to day +5 after the announcement date. The CARs (-5, 5) are computed for each news event and for each sample firm. Then, all CARs are pooled across firms and events. The regressions includes a dummy variable for each event, so that any common movement in a sample firm's CARs would be captured by the fixed effect. Firm characteristics and governance variables at the fiscal year-end of 1996 (1997) are used for the events taking place during 1997 (1998). Cash flow rights of controlling shareholders are the sum of direct equity ownership and the product of the ownership stakes obtained indirectly along the chain of a pyramid structure for controlling shareholders. Voting rights of controlling shareholders are the sum of direct equity ownership and the minimum of the level of ownership in the pyramid structure. Equity ownership by controlling shareholders is the sum of equity ownerships by owner-managers and their family members. Sum of block ownership is the sum of block holdings by all shareholders owning 5% or more of issued shares. Largest managerial blockholder concentration refers to block holdings by owners involved with management and largest non-managerial blockholder concentration to block holdings by other largest shareholders. Top 30 chaebol dummy is a dummy variable that equals one if the firm belongs to one of the 30 largest business groups in Korea. ADR dummy equals one if the firm is cross-listed in the US stock exchanges. Tobin's q is measured as the book value of debt plus market value of equity divided by total assets. Financial investment in affiliated (non-affiliated) firms means financial securities invested in affiliated (non-affiliated) firms. Cash flow is measured as the sum of net income and depreciation. . ***, **, and * denote significance of the parameter estimates at the 0.01, 0.05, and 0.10 levels, respectively.

Variables	CARs (-5, 5) for bad news				CARs (-5, 5) for good news			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.018 (-0.31)	-0.070 (-1.15)	-0.067 (-1.09)	-0.068 (-1.10)	0.125* (1.85)	0.098 (1.52)	0.109* (1.69)	0.120* (1.84)
Logarithm (voting right / cash flow right)	-0.016*** (-3.92)				0.006 (1.45)			
Equity ownership by controlling shareholders		0.063*** (2.82)				-0.063*** (-2.64)		
Equity ownership by affiliated firms		0.042* (1.85)				-0.012 (-0.49)		
Sum of block ownership by all shareholders			0.052*** (2.77)				-0.039** (-2.00)	
Largest managerial block ownership				0.078** (2.53)				-0.076** (-2.29)
Largest non-managerial block ownership				0.026 (0.93)				-0.014 (-0.49)
Beta	-0.066*** (-6.22)	-0.059*** (-5.49)	-0.058*** (-5.37)	-0.061*** (-5.79)	0.057*** (4.44)	0.059*** (4.78)	0.053*** (4.31)	0.056*** (4.58)
Logarithm (total asset)	0.011*** (3.85)	0.010*** (3.61)	0.010*** (3.68)	0.011*** (3.81)	-0.008** (-2.50)	-0.007** (-2.24)	-0.008** (-2.52)	-0.008*** (-2.66)
Total debt / total assets	-0.113*** (-8.46)	-0.106*** (-7.91)	-0.103*** (-7.76)	-0.105*** (-7.97)	0.026* (1.75)	0.023 (1.55)	0.029** (2.03)	0.030** (2.10)

Variables	CARs (-5, 5) for bad news				CARs (-5, 5) for good news			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Top 30 chaebol dummy	0.032*** (3.94)	0.024*** (2.97)	0.018** (2.50)	0.023*** (3.04)	-0.006 (-0.60)	-0.008 (-0.93)	-0.001 (-0.14)	-0.006 (-0.71)
Equity ownership by foreign investors	0.120*** (3.13)	0.174*** (4.65)	0.148*** (4.02)	0.148*** (4.28)	-0.029 (-0.65)	-0.045 (-1.13)	-0.034 (-0.87)	-0.047 (-1.19)
ADR dummy	0.020 (1.12)	0.039** (2.22)	0.039** (2.26)	0.037** (2.16)	0.036* (1.77)	0.035** (1.96)	0.035** (2.00)	0.036** (2.06)
Financial investment in affiliated firms / total assets	-0.021 (-0.65)	-0.011 (-0.36)	-0.032 (-1.01)	-0.024 (-0.73)	-0.004 (-0.11)	0.016 (0.45)	0.017 (0.48)	0.008 (0.25)
Financial investment in non-affiliated firms / total asset	-0.096*** (-2.62)	-0.115*** (-3.32)	-0.114*** (-3.20)	-0.117*** (-3.28)	-0.003 (-0.06)	-0.022 (-0.56)	-0.037 (-0.91)	-0.033 (-0.81)
Tobin's q	0.027*** (2.76)	0.027*** (2.68)	0.022** (2.29)	0.025*** (2.58)	0.002 (0.12)	0.010 (0.75)	0.003 (0.28)	0.002 (0.13)
Cash flow / total assets	0.082* (1.77)	0.071 (1.55)	0.074 (1.62)	0.079* (1.72)	-0.064 (-1.38)	-0.067 (-1.51)	-0.055 (-1.26)	-0.059 (-1.33)
F test (p value) for the hypothesis that all event dummies estimates are zero	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F test (F value)	192.33	189.39	189.81	189.75	33.73	33.42	32.81	32.87
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-value	82.08	78.58	82.06	78.09	12.94	12.71	12.83	12.33
Adjusted R ²	0.277	0.271	0.272	0.271	0.063	0.061	0.059	0.059
Sample size	4,654	4,805	4,780	4,765	3,713	3,986	3,978	3,976

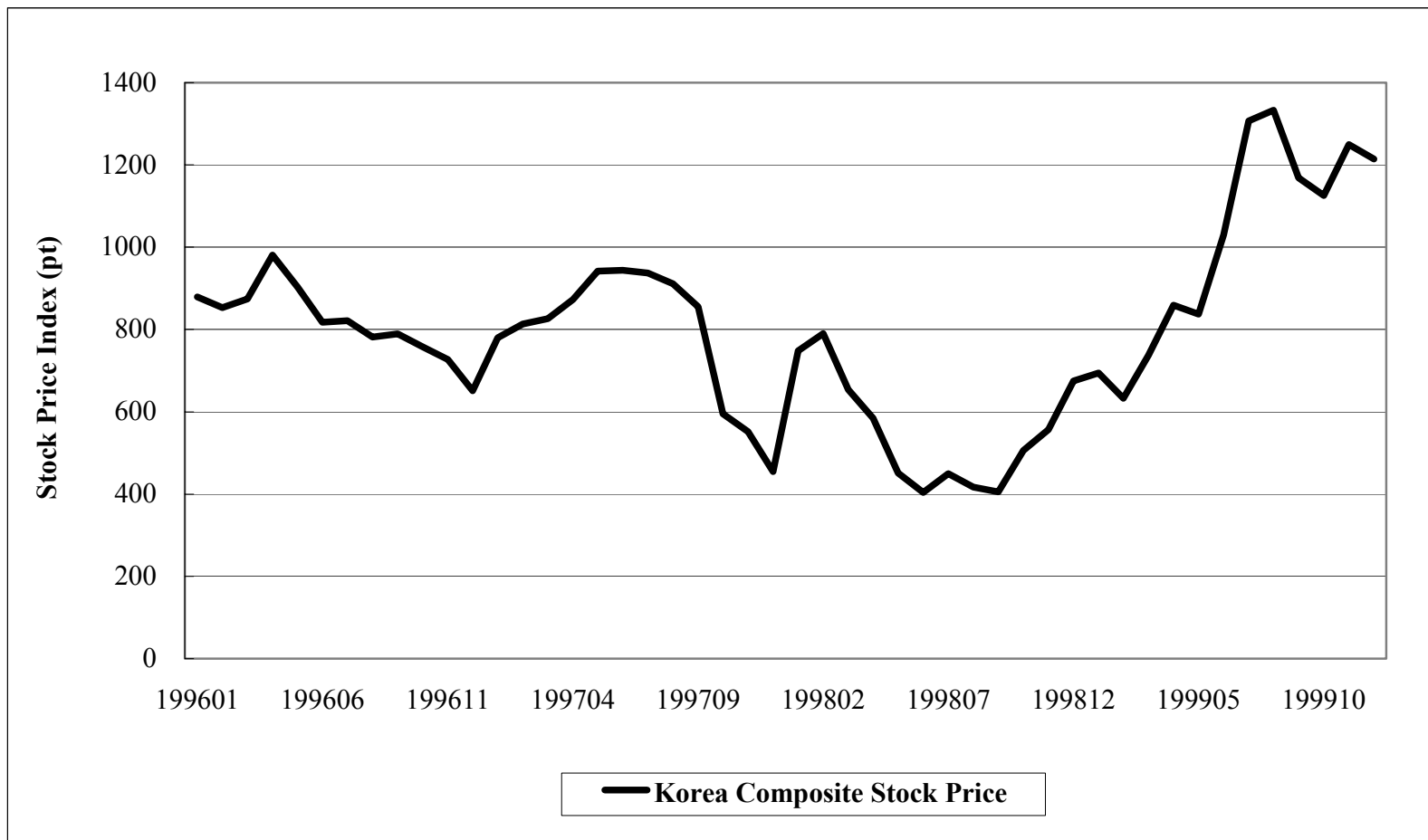


Figure 1. KOSPI from January 1996 to December 1999. Figure 1 shows the changes in the Korean Composite Stock Price Index (KOSPI) from January 1996 to December 1999. The KOSPI is a market capitalization weighted price index of all firms listed on the KSE and is the most widely used index to evaluate the market performance. The KOSPI data are from the daily return files of the Korea Investors Service-Stock Market Analysis Tool and Stock Database of the Korea Securities Research Institute.

Appendix 1

Major Exogenous Events in the Korean Economy during January 1997 ~ December 1998

Announcement date	Description of events
<i>Bad news</i>	
1997/01/23	Hanbo business group announces its default.
1997/07/15	Kia business group files for bankruptcy.
1997/10/25	S&P's downgrades the sovereign rating of Korea to A+.
1997/11/22	Korean government seeks a rescue package from the IMF to control the financial crisis.
1997/12/09	Korean government announces the nationalization of the Korea First Bank and the Seoul Bank.
1998/03/06	Moody's downgrades the sovereign rating of Korea.
1998/04/04	Moody's downgrades the sovereign rating of Japan.
1998/05/12	Moody's downgrades credit ratings of 19 commercial banks.
1998/08/18	Russian default on government bonds.
1998/10/13	Moody's warning on possible downgrades of the sovereign rating of Korea.
<i>Good news</i>	
1997/03/25	OECD updates the sovereign rating of Korea.
1997/12/25	IMF and G-7 countries make \$US 10 billion available to Korea.
1998/01/28	Settlement of the negotiations on foreign debts payments.
1998/02/17	S&P's upgrades the sovereign rating of Korea by three levels.
1998/03/28	Moody's upgrades the sovereign rating of Korea to "stable".
1998/05/16	Abolition of restrictions on foreign direct equity investment.
1998/10/19	S&P's upgrades the sovereign rating of Korea to "stable".
1998/12/05	Moody's upgrades the rating of Korea government bond denominated in Korean won.