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Abstract

Firms with poor operating performance are more likely to undertake large scale layoffs and top management turnover when investor protection is stronger. Major asset sales are more common when investor protection is very weak and very strong: Asset sales tend to be value-destroying (value enhancing) in weak (strong) investor protection countries. Strong collective relations (labor union) laws seem to be effective in preventing layoffs and asset sales, but only in countries with good investor protection. When investor protection is weak, strong union laws are associated with less management turnover and more asset sales, suggesting collusion between management and workers. Asset sales are also more frequent when employment contract laws are more rigid. When the legal variables are interacted with financial leverage, we find that leverage weakens the preventive effect of strong union laws on layoffs. The disciplining role of leverage becomes stronger with better investor protection.

I. Introduction

Much of the research in law and finance has focused on the role of legal protection of investors in shaping corporate governance¹. However, investors are but one of many stakeholders. Other stakeholders also provide important inputs to the production process and participate in firms' governance. One such stakeholder is labor, who also receives legal protection with substantial variation across countries (Botero et al. (2004))². Another important stakeholder is management, who supposedly represents shareholder interests and, unlike labor and investors, enjoys little legal protection (other than managerial contracts) in most countries.

How does different legal protection of labor and investors affect the way in which firms respond to conflicting interests among the stakeholders? How do labor laws interact with investor protection in shaping corporate governance? How do these laws and regulations affect managerial allegiance with investors and labor? These issues have received relatively little attention, although the stakeholder concept has been advocated by several authors. Tirole (2001), for example, defines corporate governance as a set of mechanisms that forces management to internalize the welfare of all stakeholders and Zingales (1998) defines it as a set of constraints that shape the ex-post bargaining power of all parties in a relationship.

Following these broader views, we illustrate the importance of labor's role in shaping corporate governance by investigating the joint effects of labor laws and investor

¹See for example, La Porta et al. (2000, 2002), Durnev and Kim (2005), and Doidge et al. (2005). For a survey of the literature, see Denis and McConnell (2003).

² Botero et al. (2004) show that the cross sectional variation in labor laws helps explain differences in unemployment. Furthermore, Besley and Burgess (2004) compare labor laws between different states in India and show that states with stronger labor regulation experience lower output, employment, investment, and productivity.

protection on corporate decisions. To highlight the conflicting interests among labor, investors, and managers, we purposefully choose corporate decisions that are likely to divide them. Specifically, we examine restructuring decisions by firms suffering a sharp drop in operating performance. Although conflicts among stakeholders tend to be more acute for these firms because someone has to give when the size of the economic pie shrinks, it is not obvious how the conflicts affect restructuring decisions. On one hand, the stakeholders may rally around the crisis for the survival of the firm; on the other hand, conflicts may lead to further deterioration of the firm.

In this paper we examine three types of restructuring measures: large scale employee layoffs, major asset sales, and top management turnover. Previous studies suggest that such restructuring measures tend to improve stock prices and operating performance³. Although the improvements should be good for shareholders, part or all of the gains may arise at the expense of other stakeholders (Shleifer and Summers (1988)). If the sacrificing stakeholders are workers and management, they are likely to resist the pressure from investors to restructure. Therefore, from a financier's perspective, shareholders' ability to force value-enhancing actions on poorly performing firms may be viewed as an ex-post measure of the quality of corporate governance. Motivated by such a view of governance, a number of studies examine how the process of restructuring is affected by the strength of shareholder influence⁴.

³ For example, see Weisbach (1988); Ofek (1993); Kaplan (1994); Kang and Shivdasani (1997); and Denis and Kruse (2000).

⁴ For example, Weisbach (1988) documents that CEOs are more likely to be dismissed when the board is dominated by outsiders. Using a sample of Japanese and US firms, Kang and Shivdasani (1997) demonstrate that the probability of corporate restructuring after negative performance increases with the ownership of main banks and other block-holders. For a sample of Italian companies, Volpin (2002) finds that the likelihood of CEO turnover depends on whether the top executive is a controlling shareholder and also on the types of controlling shareholders. In a study of eight emerging economies, Gibson (2003) shows that firms in countries of English legal origin are more likely to experience management turnover after poor

We go beyond the shareholder perspective by also considering other major stakeholders who provide labor and capital: workers, management, and creditors. The relative strength of these stakeholders differs across countries due to cultural, political, and legal factors. When capital providers have greater influence, the firm's priority is to enhance the capital value. When labor has greater influence, the value-enhancement objective may receive a lower priority. We proxy the relative power of these stakeholders by the measures of legal protection of financiers and labor developed by La Porta et al. (1998), Botero et al. (2004), and Djankov et al. (2005)⁵.

Our sample consists of 9,923 firms with sharply declining performance in 41 developed and emerging economies over the period 1993 – 2004. We compare the actions taken by these firms and examine: (1) the effects of investor protection and labor laws on the frequency of restructuring measures; (2) the interaction of labor laws with investor protection in effecting corporate restructuring; (3) how these legal variables affect managerial alliances with investors and labor; and (4) how the legal variables interact with firm-specific variables, such as ownership and capital structure, to affect restructuring decisions.

Unsurprisingly, firms located in strong investor protection countries are more likely to undertake large scale employee layoffs and force top management turnover. The impact of investor protection on major asset sales is more intriguing. We observe more asset sales when investor protection is very strong and very weak. Firms in strong

performance because the common law system in these countries tends to provide stronger shareholder protection.

⁵ The relative power of different stakeholders is also influenced by their ownership stake. In a recent paper, Faleye, Mehrotra, and Morck (2006) show that when labor has a substantial ownership stake and exerts influence on the operation of the firm, companies invest less, take fewer risks, grow more slowly, create fewer new jobs, have more free cash flow problems, and exhibit lower labor and total factor productivity.

investor protection countries are more likely to sell underperforming assets as investor protection becomes stronger, leading to superior subsequent operating performance than companies without asset sales. We observe the opposite for firms in countries with weak investor protection: Major asset reductions are more frequent as investor protection weakens; furthermore, firms with asset reductions show inferior subsequent performance than firms without, indicating value destruction from these asset sales.

Surprisingly, these value-destroying asset reductions are more likely to occur when collective relations laws grant more power to labor unions. Furthermore, management turnover is lower when collective relations laws are stronger, with the relation being significant only for firms located in countries with poor investor protection. The presence of strong union power, coupled with poor investor protection, seems to help poorly performing managers retain their jobs.

We explain these results with a Pagano and Volpin (2005) type of collusion between management and labor. When management faces potential dismissal for poor performance, they may form an alliance with labor by restraining from laying off workers or from cutting wages. Labor, in turn, may support the retention of top managers who exercise such restraint. If poor operating performance leads to the brink of bankruptcy or to an involuntary merger with another firm, workers may take industrial or political action to lobby for government bailouts or reorganization under current management intact. To maintain the collusion, the management of poorly performing firms may have to resort to selling good assets to finance the existing payroll, which in turn leads to further deterioration in firm performance. Because such asset sales are easier when

investor protection is weak, management-labor collusions should be more prevalent when investor protection is weak and union power is strong.

We also find less layoffs and asset sales when union power is strong. Although hardly surprising, it is interesting that the relation is significant only in strong investor protection countries. In weak investor protection countries, greater asset reductions associated with strong union power seem to neutralize unions' abilities to prevent layoffs; in other words, because of strong union power, the reduced employment opportunities from asset liquidations do not translate to more layoffs.

Another important aspect of labor laws described by Botero et al. (2004) is employment laws concerning labor contracts. We find that when employment contract laws are more rigid, making hiring/firing workers and reducing wages more costly, firms are more likely to undertake major asset sales during times of poor performance. When firms are deprived of the flexibility to adjust the labor input as needed during normal times, they seem to use distress as an opportunity to take more drastic actions that reduce future employment opportunities.

When we examine firm-specific variables that may affect investors' abilities to force restructuring, we find that ownership concentration tends to increase the likelihood of employee layoffs, management turnover, and asset sales. However, this relation holds only when top managers are not large shareholders. When top managers hold substantial ownership stakes, there are fewer management dismissals and asset sales, demonstrating managers' reluctance to dismiss themselves or to reduce private benefits associated with a larger asset base.

Financial leverage also is positively related to the likelihood of all three types of corporate restructuring, which is predictable given the earlier findings based on US and Japanese data (Ofek, 1993; and Kang and Shivdasani, 1997). More interesting results emerge when leverage is interacted with legal variables. When investor protection is strong, leverage shows more bite in forcing layoffs and management turnover. Perhaps more interestingly, leverage also weakens the preventive effect of strong union laws on large scale layoffs.

Again, the effect of leverage on asset sales depends on the strength of investor protection. While leverage strengthens investors' abilities to force value-enhancing asset restructuring in strong investor protection countries, leverage also exacerbates value destroying asset reductions in weak investor protection countries. The latter is consistent with the management-labor collusion hypothesis: High financial leverage is more financially constraining for firms with poor operating performance, leading to more asset sales to finance existing payrolls.

We discuss the relevant theoretical issues and develop the hypotheses in Section II. Section III describes the empirical design, the sample construction, and data. Section IV presents empirical results and robustness checks, followed by a summary and concluding remarks in Section V.

II. Theoretical Issues and Hypotheses

Both shareholders and creditors may demand performance improving restructuring measures before financial distress leads to bankruptcy, and the stronger their legal claims, the more likely firms are to respond favorably. Firms also are more likely to

undertake corrective actions when creditors have a bigger say during bankruptcy proceedings. For example, if it is easier for creditors to lay off employees, replace management, or sell underperforming assets during bankruptcy, the threat of bankruptcy is more likely to compel managers and shareholders to take those actions.

In general, we expect the strength of investor protection for shareholders and creditors to be positively related to value enhancing restructuring measures. However, conflicts may arise between shareholders and creditors regarding the timing of restructuring because shareholders have convex claims on the cash flows whereas creditors have concave claims. Thus, shareholders may want to continue longer without restructuring whereas creditors are more likely to press for early liquidation. For this reason we also separately examine the effects of shareholder protection and creditor protection.

When the legal protection is weak for shareholders and creditors, we expect a lower frequency of management turnover and layoffs. However, a weak legal environment for investors may perversely increase the incidence of value destroying asset reductions. Weak investor protection means low costs of diversion of corporate resources by management or controlling shareholders (Johnson et al. (2000), Shleifer and Wolfenzon (2002), and Durnev and Kim (2005)). At the country level, Johnson et al. (2000) show such diversions are more likely to take place during times of financial distress. At the firm level, Durnev and Kim (2005) provide a theoretical argument and empirical evidence that managers and controlling shareholders of less profitable firms are more likely to divert assets because they have less to lose than those of more profitable

firms. Thus, value destroying asset reductions are more likely to occur when firms suffer poor performance.

Poorly performing firms also may have to sell valuable assets to maintain payrolls if they do not lay off workers. Because these firms are typically cash constrained, selling underperforming assets may not be sufficient to meet current payrolls. They may have to resort to selling off good assets that generate positive synergies with other inputs of production. Such asset sales are more plausible when investor protection is weak and strong labor laws prevent layoffs and wage reductions.

Therefore, we expect more major asset reductions by poorly performing firms when investor protection is very strong (due to investors' ability to force sell offs of poorly performing assets) or very weak (due to sell-offs of valuable assets to meet payroll and to divert assets). We expect the latter effect to be more prevalent when union laws are strongly in favor of workers.

Botero et al. (2004) define three facets of labor regulation: (1) collective relations laws regulating collective agreements, organization of unions, and the industrial action of workers; (2) employment laws governing individual employment contracts; and (3) social security laws governing the social response to the needs associated with old age, disability, health, and unemployment. Strong collective relations laws strengthen union power, in turn making it easier for workers to prevent or discourage value-enhancing layoffs and asset sales that would decrease the work force.

Strong employment laws also make it difficult/costly to reduce wages, working hours, or number of workers. Such rigidity discourages employment, and Botero et al. find that more protective employment laws lead to higher unemployment. It is ambiguous

how such laws affect layoff decisions at the individual firm level during periods of poor performance. On one hand, the higher cost of reducing the workforce should discourage layoffs. On the other hand, rigid employment laws make it difficult to adjust the workforce during normal times and hence may induce firms to lay off more workers during distress than they would otherwise.

The effect of social security laws on corporate restructuring is also ambiguous. On one hand, strong social security laws may make workers feel more secure and less militant against layoffs and asset sales, making it easier for firms to restructure. On the other hand, strong social security laws may make it more costly for employers to layoff workers due to higher severance compensation, higher health care costs for retirees, etc. Furthermore, Botero et al. (2004) show that social security laws are closely related to GDP per capita; thus, they may simply proxy for a country's level of economic development. Consequently, we consider the effects of social security laws only in the robustness section.

Of these three facets of labor regulation, collective relations laws may have the most direct effect on management. Pagano and Volpin (2005) show that managers with small ownership stakes may bribe workers with high wages and collude with them to thwart hostile takeovers⁶. This collusion hypothesis may be extended to firms suffering a sharp drop in performance as well. Top managers under the threat of bankruptcy and subsequent dismissal are more likely to retain their jobs if the government bails out the firm or, in the event of default, if the firm is reorganized rather than liquidated or taken over by another firm. Employees who are paid above-market wages may collude with

⁶ In support of the collusion hypothesis, Rauh (2006) finds that managers induce employees to hold company stock in defined contribution pension plans as a protection against takeovers, but once anti-takeover legislation is passed, the contributions into these plans decrease.

management to maintain the status quo. They may take industrial or political actions to lobby for bailouts or to oppose liquidation or a merger in favor of reorganization that keeps current management intact. These lobbying efforts should be more effective in countries with strong collective relations laws and poor investor protection. For such collusion to work, management needs to raise funds to minimize layoffs and wage cuts. Lacking other means to raise the necessary funds, poorly performing firms may resort to selling valuable assets that would not have been sold otherwise.

When union laws are strong and investor protection is weak, we expect a higher prevalence of collusion between management and labor, making management turnover and layoffs less likely. Financing the collusion by sales of valuable assets will lead to further deterioration in operating performance. Such outcomes are less likely with strong investor protection, which is expected to lead to more CEO turnover, layoffs, and value-enhancing assets sales.

These corporate restructuring decisions may also be affected by firm-specific variables. Jensen (1989) argues that leverage increases the probability of bankruptcy during periods of poor performance, thereby providing more incentives to undertake measures to improve operational efficiency. Ofek (1993) and Kang and Shivdasani show that financial leverage indeed increases the likelihood of restructuring during performance declines.

We expect the disciplining role of leverage to depend on the legal protection of creditors and shareholders. Strong creditor rights will make the threat of bankruptcy more credible, while strong shareholder rights will make it more likely for firms to take

advantage of the threat of bankruptcy. Thus we expect the leverage effect to be stronger as the protection of financiers (i.e., shareholders and creditors) increases.

Leverage also has a role in strengthening financiers' bargaining position vis-à-vis labor. Bronars and Deere (1991) present a theoretical model and empirical evidence to show that firms use debt to protect shareholders from the threat of labor unions. Their results suggest that financial leverage reduces the power of labor; that is, the increased threat of bankruptcy due to leverage makes it easier to extract concessions from labor unions. Therefore, we expect the deterrent effect of strong collective relations laws on layoffs to become weaker with higher financial leverage⁷.

Another firm-specific variable related to the shareholders' ability to take corrective actions is ownership concentration. More concentrated ownership helps shareholders internalize the benefits of taking actions by lessening the free-rider problem. It also reduces coordination problems by reducing the per share cost of attempting to influence restructuring decisions. Thus, we expect ownership concentration to be positively related to layoffs, management turnover, and asset sales. However, if a CEO has a sufficient ownership stake to prevent her dismissal, ownership concentration will probably have little effect on the likelihood of a CEO turnover. Such a CEO also is more likely to resist pressures to sell off assets if her private benefits of control increase with the size of assets under control. Thus, we expect the effect of ownership concentration on CEO turnover or asset sales to be substantially weaker when top managers are also large shareholders.

⁷ These hypotheses imply that firms' choices of financial leverage might be affected by the strength of labor and investor protection. Indeed, our data reveal that financial leverage is significantly correlated with legal protection for both labor and investors. Examining how these legal factors interact with tax laws as well as with firm-specific attributes to determine financial leverage is beyond the scope of this paper.

III. Empirical Design and Data

A. Regression specification

To test our hypotheses we estimate the following regression model:

$$\Pr(R_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \sum_{j=5}^6 \beta_j X_{ikj} + \varepsilon_{ik}) \quad (1)$$

$F(\cdot)$ is the logistic function, R_{ik} is management turnover, asset sales, or employee layoffs of company i in country k . *Financier* measures the legal protection of shareholders and creditors; *Labor*, the strength of labor protection; *Lev*, financial leverage; and *Own*, ownership concentration. The vector of control variables X_{ikj} includes firm size and last year's operating performance. To account for the interaction between leverage and the legal variables, we add interaction terms, $\text{Lev} * \text{Financier}$ and $\text{Lev} * \text{Labor}$, to (1).

We separately estimate regression (1) with *Labor1*, measuring the rigidity of employment laws, and *Labor2*, measuring the strength of collective relations laws. Regressions are estimated separately for the labor variables to mitigate multicollinearity problems stemming from their high correlation (0.3264). The variance inflation factor (VIF) increases to 3.16 when we use *Labor1* and *Labor2* together. The VIF is 2.23 with *Labor1* only and 2.45 with *Labor2* only.

In all the specifications we perform the Breusch-Pagan (1980) test, which strongly supports the use of country random effects. The use of country random effects controls for country specific factors that may affect our results⁸. There is a potential problem if the

⁸ We use country random effects rather than country fixed effects because some of our explanatory variables are at the country level.

unobserved country level effects are correlated with any of the explanatory variables. We explore this possibility in the robustness section by including several country level variables that may be correlated with the explanatory variables in the main regressions. The results are similar. We also use time fixed effects to control for possible macroeconomic factors (e.g., financial crises and recessions) and industry fixed effects at the two digit SIC level to control for industry-wide factors that may affect the likelihood of restructuring. Following Norton et al. (2004), we correct the coefficients on the interaction terms for the non-linearity of the logit specification. All multivariate estimations are performed with robust standard errors, clustered at the country level.

B. Sample Selection and Data

B.1. Sample Construction

The primary source of our firm level data is Worldscope. We identify poorly performing companies by looking for initially healthy firms that suffer a sharp drop in operating performance. We select firms at the onset of poor performance in order to avoid firms that have suffered poor performance and already have undertaken restructuring measures. Operating performance is measured by operating income before depreciation and amortization divided by total assets (EBITDA/TA).

We use two different definitions of sharply declining performance. For management turnover, we measure operating performance relative to industry; for layoffs and asset sales, we use a percentage drop in operating performance. To illustrate the need for different criteria, consider a firm with a large operating loss in an industry that as a whole is suffering from very poor operating performance. If the firm's operating loss is

smaller than the industry median, the management may not be subject to dismissal; however, the firm may still need to save costs through employee layoffs and asset sales.

We identify 25,698 industrial companies from 41 countries over the period 1993-2004 that have sufficient data to conduct our tests⁹. From these firms we construct the sample of firms to analyze management turnover by following the procedure outlined by Denis and Kruse (2000); the company's EBITDA/TA is above the industry median initially in year t-1 (the base year), but falls to the bottom quartile of its industry in year t (the distress year)¹⁰. This yields 6,988 poorly performing firms in 41 countries over our sample period.

To construct the sample to analyze layoffs and asset sales, we follow the procedure outlined by Kang and Shivdasani (1997) and require that the company initially has a positive, above-industry median EBITDA/TA in the base year and experiences a drop of more than 50% in EBITDA in the following (distress) year. This selection procedure yields 8,493 companies in 41 countries. Table I presents the total number of firm-years with available data for each country and the number of poorly performing firms with at least a 50% drop in EBITDA. The proportion of distressed firms is fairly evenly distributed across countries with a mean of 11 percent. Two-thirds of the

⁹ We exclude the firm-years when data is missing for any of the legal variables, firm specific variables, and variables needed to construct the restructuring variables. We also exclude firms with zero values for sales, total assets, and number of employees and firms that have a leverage ratio (short-term debt plus long term debt divided by total assets) greater than one or negative.

¹⁰ Because Worldscope covers an insufficient number of firms in the traditional definition of industry groupings for some countries, for the sample selection procedure we use a more flexible definition of industry groupings. If more than five firms have the same three-digit SIC code in a given country in a given year, we use the three-digit SIC group. Otherwise, we use the two-digit SIC group if there are more than five firms with the same two-digit SIC code. Likewise, we use the one-digit SIC group if there are less than five firms in the two-digit group, and the rest of the companies in the same country when there is insufficient number of firms in the one-digit group. Finally, if there are less than five firms in a given country in any given year, we drop that country from the sample for that year.

distressed firms are observed between 2000 and 2004 because firms and countries covered by Worldscope increases dramatically after 2000.

To measure operating performance, we use an accounting-based measure rather than a stock market based measure, because stock markets are forward looking and market values reflect the likelihood to undertake restructuring measures. For example, a shareholder-value oriented company may experience a smaller drop in valuation for the same decline in operating performance because the stock market anticipates value-enhancing restructuring.

Direct comparisons of the accounting based data may be difficult because of different accounting standards across countries. However, a key distinguishing characteristic in legal environments across countries is accounting standards; thus, to some extent, the legal variables in the regressions control for such differences. Additionally, industry dummies help control for different accounting practices across industries. Any remaining noise would weaken the power of our tests. Nevertheless, we conduct a robustness check by using different cut-off points in constructing the sample (i.e., 30 % and 40% instead of the 50% drop in EBITDA/TA). The main results are robust to different cut-off points.

B.2. Measures of Corporate Restructuring

Following the literature on corporate restructuring, we use three measures of restructuring: top management turnover, large scale employee layoffs, and major asset sales¹¹. Our measures of restructuring are not as refined as those in single-country studies

¹¹ Our restructuring measures include only operational ones and do not include financial restructuring, sale of the firm, filing for bankruptcy, and wage reductions. Financial restructurings, such as debt renegotiation, debt forgiveness, or debt equity swaps represent restructuring of financial claims between capital providers. Filing for bankruptcy is not considered because our focus is on voluntary restructuring measures. The sale

because of our inability to read news articles concerning our sample of firms encompassing 41 countries.

We construct the *management turnover* variable from the data on top executive names provided by Worldscope. This variable takes the value of one for year t if the top two executives in year $t-1$ do not appear as executives in year t or year $t+1$, and zero otherwise, where year t is the distress year. We include year $t+1$ because replacing top management may take time. We use the removal of the top two officers rather than only the top officer for two reasons. First, Worldscope does not rank officers but provides only their titles, which are not uniform across countries. Because it is sometimes difficult to identify the top officer by title alone, we take this more conservative approach. Second, top management turnover is more likely to be forced rather than voluntary if both of the top executives leave the company. For a robustness check we use an even more stringent definition of management turnover using a variable equal to one when all three top executives in year $t-1$ do not appear as executives in year t or year $t+1$.

The data for employee layoffs and asset sales also come from Worldscope. The variable *Layoffs* takes a value of one if a company experiences a drop in the number of employees from year $t-1$ to year t or $t+1$ by more than 20%, and zero otherwise. The variable *Asset sales* takes a value of one if a company experiences a drop in the value of its net property, plant, and equipment (NPPE) from year $t-1$ to year t or $t+1$ by more than 15%. Although these cutoff rates are somewhat arbitrary, they are based partially on

of the firm maybe considered as a 100% asset sale, while wage reductions can be considered as a partial layoff. Neither is included in our measure of restructuring because the necessary data are unavailable. The omission of these measures underestimates the true extent of restructuring. However, the extent of the underestimation is likely to be very small. Only 1.58 % of our sample firms disappear during the year of distress and the following year, which can be due to bankruptcy, mergers, or Worldscope's decision to stop covering them for reasons unrelated to bankruptcy or mergers.

previous findings¹². For robustness we use different cutoff levels for layoffs (15% or 25% decline in the number of employees) and asset sales (10% or 20% reduction in NPPE) and find similar results.

Admittedly, the raw data from which we construct *Layoffs* are noisy. Hallock (1998) observes that the Compustat database does not record the changes in employment numbers as frequently as changes in financial variables, because personnel information is subject to looser reporting and auditing requirements than financial variables. To the extent that other countries suffer a similar problem, it would understate our estimate for *Layoffs*. Although this problem is somewhat mitigated by our inclusion of year t+1 in defining *Layoffs*, the potential underestimate of *Layoffs* would weaken the power of our tests.

It is also possible that accounting write-offs lead to an overestimate of *Asset sales*. Our use of the change in NPPE, instead of total assets, to measure asset sales mitigates the problem because inventories and account receivables, which are often subject to write offs, are excluded from the definition of NPPE. Write-offs due to a plant closure or scrapping equipment would also reduce NPPE; however, such actions are precisely what we want to capture as asset restructuring.

B.3. Legal variables

Our measure of investor protection considers both the *de jure* and *de facto* aspects of regulation. The *de jure* measures come from Djankov et al. (2005) and La Porta et al. (1998). We define the variable *Shareholder* equal to the sum of normalized value of the

¹² Kang and Shivdasani (1997) identify layoffs and asset sales through newspaper articles, and report a mean (median) layoff of 20.9% (20%) of their total workforce and a median asset sales of 7.5% of total assets. We use a 15% cutoff rate for asset sales because Denis and Kruse (2000) report a higher reduction in total assets for their sample (28.2%).

revised anti-director index and the anti-self-dealing index. The anti-director index, originally constructed by La Porta, et al. (1998), was revised by Djankov et al. (2005). It is composed of six sub-indices that assess the possibility of proxy voting by mail, blocking shares before a shareholder meeting, cumulative voting, oppressed minority, preemptive rights, and the percentage of share capital required to call an extraordinary shareholder meeting. The anti-self-dealing index consists of sub-indices that assess the amount of disclosure before and after the transaction has occurred, the need for approval by disinterested shareholders, and litigation governing a specific self-dealing transaction. Both indices measure minority shareholder protection against management/controlling shareholders' actions that would decrease shareholder value.

We also define a variable, *Creditor*, equal to the La Porta, et al. (1998) creditor index, which evaluates whether there is no automatic stay on assets, whether secured creditors are paid first, whether there are restrictions on going into reorganization, and whether management stays in the reorganization. These legal protection indices measure formal rules but enforcement of these rules varies across countries.

The proxy for *de facto* regulation is based on the *Law and Order* variable constructed by the International Country Risk Guide. It is an assessment of the strength and impartiality of the legal system and of the popular observance of the law. The *Law and Order* score is updated monthly. We take yearly averages of this index and lag it by two years from the distress year.

Because these four legal variables are scaled differently, we normalize them on a scale of zero to one. Table I shows the normalized values of *Anti-director*, *Anti-self-*

dealing, *Creditor*, and *Law and Order* for each of the 41 countries over the sample period¹³.

Table II presents correlation coefficients between *Anti-director*, *Anti-self-dealing*, *Creditor*, and *Law and Order*. All four are significantly correlated with each other. To mitigate potential multicollinearity problems, we combine these *de jure* and *de facto* aspects of investor protection in a single variable by creating a *Financier* variable which equals the sum of *Anti-director*, *Anti-self-dealing*, *Creditor*, and *Law and Order*. For robustness, we use different combinations that include only the revised *Anti-director* index or only the *Anti-self-dealing* index with *Creditor* and *Law and Order*. The results remain unchanged.

The data for labor regulations come from Botero et al. (2004), who classify labor laws into three major indices. As mentioned earlier, the first index measures the rigidity of employment contracts, which is defined as *Labor1*. The second index, *Labor2*, assesses the legal protection of labor unions and the regulation of collective disputes. The third index, *Labor3*, measures the strength of social security laws. These indices measure more than purely formal rules. They include measures of actual economic costs of worker protection such as the cost of increasing working hours and the cost of firing workers.

The scores for these variables and their correlations with other legal variables are reported in Tables I and II. All four measures of investor protection are negatively correlated with all three measures of labor protection, suggesting that countries with strong investor protection tend to have weak labor laws and vice versa. Table II also shows that all three labor indices are positively correlated with each other. *Labor3* is

¹³ The *Law and Order* reported in Table I is the average over the period 1991-2002, where we use the same value for both 2001 and 2002.

significantly, positively correlated with *Law and Order* whereas *Labor1* and *Labor2* are not. This difference may be due to the fact that social security laws are closely related to the economic development of a country. Botero et al. (2004) show that social security laws are significantly positively related to Log GNP per capita whereas employment laws and collective relations laws are not.

B.4. Firm-specific variables

Data for firm-specific variables also come from Worldscope. We use the logarithm of sales to measure the size of the firm. Large firms are more likely to be unionized, have a better chance to be bailed out by the government in the event of financial distress, and may be slow to react to external changes. They also receive more public attention and are more likely to be covered by Worldscope. It also may be easier for smaller firms to layoff 20% of their employees and sell 15% of their asset than it is for larger firms. Financial leverage is measured by the ratio of short term plus long term debt divided by total assets.

Ownership data come from Worldscope, Amadeus, the ISI Emerging Markets Database, local stock exchanges, and company websites. We proxy the ownership concentration variable, *Own*, by the sum of the equity stakes of the three largest shareholders who own more than 5% of the firm shares. None of the firms in our sample list the government as a direct owner with more than 5%. The ownership data for top executives is available only for 2002-2004. We take the average for the three years and use it as a proxy for the actual managerial ownership for the rest of the period. All firm specific explanatory variables are winsorized at the 1% level, because firm-level data for countries as diverse as ours are susceptible to outlier problems.

Table III provides summary statistics for firm specific variables for the base year and distress year¹⁴. Panel A shows that all measures concerning size, profitability, number of employees, and dollar amount of outstanding debt, drop significantly from the base year to the distress year. The decline in total assets, NPPE, and the number of employees suggests that these poorly performing firms engage in restructuring measures reducing investments and the size of the workforce. Consistent with these actions, the incidence of layoffs of more than 20% of the employees nearly doubles, from 4.95% during the base year to 7.14% in the distress year. Asset sales greater than 15% of the firm's NPPE also increase from 11.96% to 18.44%. The propensity of management turnover also increases significantly from 6.29% to 8.32%¹⁵. These statistics indicate that companies tend to respond to performance declines¹⁶.

The only variable that does not change is leverage, which can be explained by the simultaneous reduction both in the dollar amount of debt outstanding and in total assets. All of these dollar-based variables are highly skewed as witnessed by the big differences in mean and median.

Panel B cross-tabulates the three different measures of corporate restructuring. It shows that the fraction of firms instituting large scale layoffs increases from 7.14% overall to 19.16% for companies with asset sales. Likewise, the fraction of firms selling

¹⁴ All descriptive statistics are based on the sample of firms in which the performance decline is defined as a drop in EBITDA greater than 50%.

¹⁵ This turnover ratio of 8.32% during the distress year is smaller than the average CEO turnover ratio reported by previous studies. For example, Ofek (1993) reports an average ratio is 21% for his sample of US firms; Kaplan (1994), a mean rate of 14.86% for Japanese firms and 10.35% for US firms; and Kang and Shivdasani (1997), a mean rate of 14.3% for Japanese firms and 7.9% for US firms. The turnover ratio for our sample is lower because our definition of turnover requires the removal of the top two officers instead of the CEO only and our sample covers a much broader cross section of countries.

¹⁶ The number of observations is greater than the number of firms because some firms enter our sample more than once. The number of observations for *layoffs*, *asset sales*, and *management turnovers* is smaller than the total number of observations because of missing data for employees, NPPE, and officer names for two consecutive years in Worldscope. In addition, *management turnovers* come from a sample based on a different definition of performance decline.

assets increases from 18.44% overall to 50.27% for companies laying off employees. These increases are statistically significant at the 1% level. The fraction of companies with management turnover is 8.32% overall and does not change whether firms sell assets or layoff employees. Thus, while layoffs and asset sales seem to complement each other, management turnover appears largely unrelated to either layoffs or asset sales.

IV. Empirical Results

A. Univariate analysis

To start analyzing the relation between legal environment and the likelihood of corporate restructuring, we divide the countries into quartiles based on the legal protection of financiers and labor. In Table IV, we compare the average proportion of firms experiencing layoffs, asset sales, and management turnover between the top and bottom quartiles. The results show that a significantly higher proportion of companies undergo layoffs and asset sales in countries with more rigid employment laws. Management turnover is unrelated to employment laws.

Stronger collective relations laws are associated with significantly fewer employee layoffs. Interestingly, the frequency of asset sales is higher and management turnover is lower when collective relations laws are stronger. The latter suggests that the presence of strong unions increases top management's job security.

As expected, stronger investor protection is associated with more employee layoffs and a greater frequency of management turnover. The relation between asset sales and investor protection is surprising, however. There are fewer asset sales when investor protection is strong. The same holds true when the sample is divided based on the anti-

director index, anti-self-dealing index, and creditor protection index instead of the combined index of financier protection¹⁷. We investigate these results in greater detail in our multivariate analysis.

B. *Multivariate Analysis*

In this section we test our hypotheses concerning the joint effects of legal and firm specific variables by estimating country random effects regressions. We first report results for the likelihood of employee layoffs and management turnover, followed by results on asset sales.

B.1. *Employee layoffs and management turnover*

Table V reports the results of logit regressions where the dependent variable is equal to one if there are large scale layoffs or management turnover. Panel A reports results for layoffs, and Panel B for management turnover. The effects of legal variables are largely consistent with the conclusions reached with the univariate analysis. Stronger financier protection increases the likelihood of both layoffs and management turnover. If a firm in the lowest quartile of investor protection were relocated to a country in the top quartile, everything else being equal, the likelihood of employee layoffs would increase from 6.0% to 10.0% and the likelihood of management turnover from 7.0% to 9.6%.

As expected, the strength of collective relations laws (*Labor2*) seems to diminish the likelihood of employee layoffs. If a firm in a bottom-quartile country were relocated to a

¹⁷ To examine whether asset sales are affected by a conflict of interest between stockholders and creditors, we separate the financier protection variable into shareholder (the sum of anti-director index and the anti-self-dealing index) and creditor protection and examine whether the frequency of asset sales is different between different configurations of bottom and top quartiles by shareholder and creditor protection (i.e., a 2 by 2 analysis, where the rows represent top and bottom quartiles of creditor protection and the columns represent the top and bottom quartiles of shareholder protection). There is no difference between firms that are in the top creditor and bottom shareholder protection quartiles and firms that are in the top shareholder and bottom creditor quartiles, while the top quartiles for both creditor and shareholder protection have significantly less asset sales than the bottom quartiles for both creditor and shareholder protection.

top-quartile country, the probability of large scale employee layoffs is reduced from 10.5% to 5.5%.

The interaction term of *Labor2* with leverage is significantly positive for *Layoffs*, suggesting that the deterrent effect of strong union laws on layoffs is reduced when firms have more debt. This is consistent with Bronars and Deere (1991) who find that US firms with stronger unions have higher leverage, which suggests that firms may use leverage as a bargaining tool against unions.

The coefficient on *Labor2* for management turnover is negative in all four specifications, and three are statistically significant, suggesting that management is also protected by strong labor unions. If a firm in a bottom-quartile country by *Labor2* were relocated to a top-quartile country, the probability of management turnover would be reduced from 9.9% to 6.8%.

In contrast to *Labor2*, employment contract laws (*Labor1*) are not significantly related to layoffs or management turnover. The lack of significant relation between *Labor1* and employee layoffs might be due to two opposing forces brought about by rigid employment laws; namely, the higher cost of firing workers offsets the distressed firm's need to layoff more workers during distress due to the inflexibility to adjust workforces during normal times.

These results on legal variables may be partially due to systematic pre-distress differences across countries. For example, companies may employ more (less) workers in countries with strong financier (labor) protection during normal times (i.e. in the base year), leading to a positive (negative) relation between financier (labor) protection and layoffs during distress year. To check against this possibility, we estimate country

random effects regressions relating the number of employees scaled by sales in the base year to *Financier*, *Labor1* and *Labor2*, with industry and year fixed effects. We find no significant relations for any of the legal variables (not reported).

The results on the firm specific variables are consistent with those documented by Ofek (1993) and Kang and Shivdasani (1997). Leverage increases the likelihood of both layoffs and management turnover, as does poor performance. We find that an increase in leverage from one-half standard deviation below the mean to one-half standard deviation above the mean (one standard deviation in total), increases the likelihood of a layoff by 0.72% and the likelihood of management turnover by 0.44%. Similarly, one standard deviation increase in performance decreases the likelihood of a layoff by 2.63% and the likelihood of management turnover by 0.86%. Size also seems to matter: Smaller firms are more likely to undertake large scale layoffs whether *Labor1* or *Labor2* is included in the regression. One standard deviation increase in size decreases the likelihood of a layoff by 1.20% (1.06% when *Labor2* is used). Size is also positively related to management turnover but the relation is significant only in the regressions with *Labor2*. The economic significance of the firm-specific variables is surprisingly low in comparison to the country-level variables. This difference is consistent with Doidge, Karolyi and Stulz (2005) who find that country-level variables matter more than firm-specific variables in influencing the quality of corporate governance practices.

The interaction terms between financier protection and leverage are positive and significant for three out of four specifications. Apparently, leverage has more bite in forcing layoffs and management turnover when investor protection is strong. The interaction terms between *Financier* and *Performance* are negative and significant in two

of the four specifications. Firms in stronger investor protection countries seem to be more inclined to layoff workers and force management turnover as operating performance worsens.

Ownership concentration also seems to increase the likelihood of layoffs by providing shareholders more power to impose their will. An increase of one standard deviation in ownership concentration increases the likelihood of large scale layoffs by 0.76%. The coefficients of ownership concentration on management turnovers are all positive but significant in only two of the eight specifications. This weak result may reflect the fact that some of the largest shareholders are also managers who are unlikely to dismiss themselves.

To control for such a top-manager-large-shareholder effect, we add a dummy variable, equal to one if any of the top three managers own more than 5% or share the same last name and first initial with any of the major shareholders who owns more than 5%. Table VI shows the regression estimates. Columns (3) and (4) indicate that the likelihood of management turnover is significantly lower if top officers are also major stockholders. The coefficient on the ownership concentration variable becomes significant when we use the management/ownership dummy and control for *Labor2*. *Labor2* controls for the possibility of collusion between management and labor in firms where managers have small ownership stakes. With this additional control variable, the results show that ownership concentration increases investors' ability to remove underperforming management with small equity stakes¹⁸.

¹⁸ The managerial ownership data is unavailable for a number of firms, reducing the number of observations substantially for the regressions using this manager/owner dummy.

B.2. Asset sales

The last two columns of Table VI show a negative and significant relation between asset sales and the management ownership dummy. Just as managers with significant ownership stakes do not fire themselves, they also seem reluctant to reduce asset size, perhaps because they derive more private benefits of control from a larger asset base. For example, studies find that one of the most important explanatory variables for managerial compensation is firm size. (See Murphy (1999) and Bertrand and Mullainathan (2001).)

The last two columns also show that financier protection is negatively related to asset sales, consistent with our earlier result in the univariate analysis. There are three potential explanations. First, more asset sales in weaker investor protection countries could be due to management's need to finance the current payroll in order to maintain its collusion with labor. Second, it could be due to the expropriation of minority shareholder and creditor wealth by managers or controlling shareholders. For example, Siegel (2005) documents substantial illegal asset grabbing in his study of Mexican firms during economic downturns. Such illegal asset grabbing is more likely to occur in countries with less protection for creditors and minority shareholders.

Third, although we control for firm size in the regression, there still might be a concern that companies in countries with poor investor protection may be smaller and therefore more likely to sell off assets during performance declines. Our data tell a different story. The median (mean) total assets during the distress year is \$200,500 (\$5,546,947) and \$430,936 (\$214,000,000) for the highest and lowest quartile investor protection countries, respectively. The corresponding sales figures are \$156,014 (\$6,418,417) and \$344,154 (\$72,400,000); and the numbers of employees, 675 (3,282)

and 727 (4,014)¹⁹. Although these somewhat surprising results may be due partially to the way Worldscope selects companies from different countries, the point is that the difference in size cannot explain the negative relation between asset sales and financier protection.

Thus, we investigate the liquidation, grabbing, and/or tunneling of good assets hypothesis by comparing the post-asset sales performance of companies in the top and bottom quartile countries in financier protection. If these motives are important reasons for the reduction in asset size in countries with weaker financier protection, the performance of companies with asset sales should be worse than that of companies without asset sales.

Panel A of Table VII compares the performance of firms with asset sales to those without for countries in the bottom and top quartile in financier protection. The comparisons are made between the distress year and the two-year period following the year of distress. The table shows the mean and median changes for EBITDA/TA and Sales/TA, with rows 3 and 6 showing the difference between firms with asset sales and firms without. The results are striking. In terms of operating profit (EBITDA/TA) firms with asset sales ($ASales = 1$) in the top quartile countries show significant improvement in their post-distress performance, and their improvement is significantly greater than those without asset sales ($ASales = 0$). The results are the opposite for the bottom quartile countries. Those with asset sales show either small improvement or further deterioration,

¹⁹ When we break the sample into two groups instead of quartiles, the median (mean) numbers for total assets are 762,229 (258,000,000) and 2,640,269 (281,000,000) for countries above and below the median of financier protection, respectively. The corresponding sales numbers are 581,943 (96,900,000) and 1,524,405 (140,000,000); and the number of employees, 796 (3,574) and 731 (3,696). In addition, we find that total assets and sales are significantly negatively correlated with our measure of financier protection.

depending on whether the change is measured by mean or median, whereas those without asset sales show much more significant improvement in their post-distress performance²⁰.

Similar results emerge for asset turnover (Sales/TA). Selling assets improves the utilization of assets (relative to firms without asset sales) in the top financier protection countries, whereas asset reductions worsen asset utilization in the bottom financier protection countries. These results suggest that firms in top-quartile countries tend to sell underperforming assets during times of distress, whereas the managers or controlling shareholders in the bottom-quartile countries tend to liquidate, grab, and/or tunnel good assets at the expense of financiers.

Finally, these differences in performance seem to be related to the frequency of firms' disappearance from the sample. The last three rows show that in the bottom quartile financier protection countries significantly more firms with asset sales disappear from the sample than those without asset sales. In contrast, in the top quartile countries there is no difference between firms with and without asset sales. The last column also shows that among the firms with asset sales, a significantly larger fraction of firms in the bottom quartile disappear from the sample than those in the top quartile countries. These disappearances from the sample could be due to bankruptcy or mergers, although it is possible that Worldscope discontinues their coverage for other reasons.

To check whether these univariate results on asset sales are robust to controlling for other firm characteristics, we conduct multivariate analysis for changes in post-distress performance in terms of EBITDA/TA and Sales/TA for countries with poor financier

²⁰ This difference between firms with and without asset sales for the bottom quartile countries is not due to the greater likelihood of firms with worse performance to undertake asset sales. Panel B in the same table shows that the relation between operating performance during the distress year and the subsequent change of EBITDA/TA, if anything, is negative.

protection (below the median) separately from countries with strong financier protection (above the median). The main variable of interest is asset sales, while we control for firm size, performance during the distress year, ownership concentration, and leverage. Unlike the other regressions, we report regression results with country fixed effects because none of the explanatory variables is measured at the country level. For robustness, we use country random effects and the results are qualitatively similar (unreported).

Panel B of Table VII reports results that are consistent with the conclusions reached from the univariate analysis²¹. The coefficient on asset sales is significantly negative for countries with poor investor protection whether the dependent variable is operating profit or asset turnover; in contrast, the coefficient is significantly positive for countries with strong investor protection for both dependent variables.

Of the four control variables, the most noticeable is size, which has a significantly negative effect regardless of how post-distress performance is measured and of the strength of investor protection. Perhaps smaller firms are more flexible and better able to undertake more value-enhancing restructuring. They may also be less subject to management-labor collusion because smaller firms tend to have higher managerial ownership and less unionized workforces. We estimate similar regressions with layoffs and management turnover as independent variables (not reported). In contrast to asset sales, both layoffs and management turnover have positive effects on post-distress performance regardless of the strength of financier protection.

Whether the inferior operating performance subsequent to asset sales in weak investor protection countries is due to liquidation of good assets to pay off workers or to asset

²¹ The sample size is substantially smaller than other regressions because we require a company to have at least four consecutive years of data and a large number of the companies in our sample appear for the first time during the last three years of our sample period.

grabbing/tunneling by management or controlling shareholders is difficult to disentangle with our data. Furthermore, both practices could be taking place at the same time. What our data show is that these asset reductions are value destroying regardless of whether the diversion of corporate resources is used to pay off workers or the controlling shareholders/managers.

Because of the sharply contrasting results between the two sets of countries, our sample is divided by the median strength of financier protection to estimate the effects of legal and firm-specific variables on the likelihood of asset sales. The regression results are reported in Table VIII. The strength of investor protection is positively related to asset sales in strong financier protection countries, whereas the relation is negative when financier protection is weak. Specifically, if a firm in a second-quartile country were relocated to a first (top)-quartile country, the likelihood of asset sales would increase from 9.5% to 14.4%. In contrast, if a firm in a fourth (bottom) quartile country were relocated to a third-quartile country, the likelihood of asset sales would decrease from 34.2% to 17.1%.

The results also show that more rigid employment laws encourage asset sales during distress. Unlike layoffs, rigidity in employment laws does not impose a direct cost to the firm for selling assets, although it might add indirect costs to the extent that asset sales lead to more layoffs. Apparently, the indirect costs, if any, are outweighed by distressed firms' desire to take drastic actions (major asset sales) when they are unable to adjust labor inputs during normal times due to rigid employment laws.

The interaction term between leverage and *Financier* is significant with *Labor1* but switches signs depending on whether investor protection is above or below the median.

An increase in investor protection seems to give leverage more bite to force value-enhancing asset restructuring in strong investor protection countries, whereas in weak investor protection countries leverage seems to encourage firms to engage in more asset liquidation, grabbing, and/or tunneling as investor protection decreases. To the extent that weak investor protection makes management-labor collusion easier and/or expropriation of investor wealth less costly, leverage seems to exacerbate the moral hazard problem. Everything being equal, managers of more highly indebted firms face a greater probability of bankruptcy and subsequent dismissal and, hence, have more incentive to engage in activities harmful to investors²².

To check if the relations between the legal variables and asset sales are driven by preexisting conditions prior to the performance decline, we again estimate country random effect regressions relating NPPE scaled by sales in the base year to *Financier*, *Labor1* and *Labor2*, with industry and year fixed effects. As with the number of employees, we find no significant relations for any of the legal variables (unreported).

The effects of other control variables on asset sales are essentially the same as their impact on layoffs. Firms with smaller size and poorer performance tend to sell more assets. These results hold for both above and below the median of financier protection.

B.3. Effects of collective relations laws in weak investor protection countries.

Table VIII also shows that the effect of collective relations laws on asset sales depends on the strength of investor protection. When investor protection is relatively strong, stronger union laws seem to discourage selling assets, helping to protect

²² In unreported regressions, we also interact *Performance* and *Financier*. Although the signs are in the right direction, the coefficients on the interaction term are insignificant for all specifications. The rest of the results remain unchanged.

employment opportunities. However, union power is significantly positively related to asset reductions in countries with weak investor protection. It would be easier for managers in these countries to collude with labor, which may require the liquidation of assets to maintain workers' support. Managers or controlling shareholders also are more tempted to grab/tunnel assets during financial distress when the presence of strong uncooperative unions diminishes the hope of restoring financial health through a rationalization of operations. In either case, the losers are the minority shareholders and creditors.

If strong union power in countries with weak financier protection indeed leads to more liquidating, grabbing, and/or tunneling of assets, employment opportunities within the firm would decline. Therefore, strong collective relations laws may not be effective in preventing large scale layoffs in those countries. To examine this possibility, we repeat the analysis in Table V for *Labor2*, with layoffs as the dependent variable, by dividing the sample into high- and low-financier protection countries. The results are reported in Table IX. Consistent with our conjecture, the significant negative relation between employee layoffs and *Labor2* documented in Table V, Panel A is due to the firms in high-financier protection countries. For low-financier protection countries the relation is insignificant. To formally test whether the coefficients on *Labor2* are significantly different between the two sets of countries, we re-estimate the same regression for the total sample with an additional interaction term between *Labor2* and a dummy variable, equal to one if a firm is located in a country with above the median financier protection. The coefficient on the interaction term is negative and significant, and the rest of the coefficients are qualitatively similar.

To provide further corroborative evidence for the collusion between management and labor, we again split the sample by the median financier protection and relate *Labor2* to management turnover. The results are reported in Table X. The negative effect of union power on management turnover is significant only in weak financier protection countries. In poor investor protection countries, the probability of management turnover would be reduced from 15.7% to 7.8% if a firm located in a bottom-quartile country on the strength of collective bargaining laws were relocated to a top-quartile country. The relation for good investor protection countries is insignificant, and a similar relocation of a firm results in a reduction of the probability of management turnover by only 2.9% (from 9.6% to 7.5%)²³. As in Table IX, we re-estimate the same regression for the total sample with an additional interaction term between *Labor2* and a dummy variable, equal to one if a firm is located in a country with above the median financier protection. The coefficient on the interaction term is positive and significant, and the rest of the coefficients are qualitatively similar.

Finally, the Pagano and Volpin (2005) collusion hypothesis against hostile takeovers is more relevant when managers have a small equity stake. Thus we add the management ownership dummy, equal to one when any of the top three managers hold more than 5% of shares, and interact it with *Labor2*. The results are reported in columns (4) and (8) of Table X. Our main interest is in column (8), where we expect the collusion to be more prevalent and hence a positive coefficient on the interaction term between *Own dummy* and *Labor2*. Although the sign is in the right direction, the coefficient is insignificant. It is difficult to draw a definitive conclusion based on this regression result. The

²³ To check whether the effects of employment contract laws (*Labor1*) on layoffs and management turnover are related to investor protection, we repeat the regression analyses in tables IX and X with *Labor1* in place of *Labor2*. The coefficient on *Labor1* remains insignificant for all specifications.

insignificant result might indicate that the collusion hypothesis for firms in distress is valid even when managerial ownership is greater than 5%. It might also be due to fact that the sample size with the ownership dummy variable is too small to be divided into two groups²⁴.

In sum, our results suggest that strong union laws lead to more asset sales and less management turnover in weak investor protection countries. It appears that management-worker collusion helps top managers retain their jobs by paying off workers with the proceeds from the liquidation of assets. Such liquidations would result in more layoffs, but strong union power seems to neutralize the effect on layoffs.

C. Robustness.

We conduct numerous additional tests to examine whether our results are robust to different model specifications, sample selection criteria, and variable definitions. For brevity, we describe most of our results without reporting them.

First, we investigate whether the omission of some important variables affecting both the legal protection of labor and financiers and the probability of corporate restructuring can explain or diminish the importance of our findings, although controlling for country random effects should alleviate some of the concerns. A possible candidate for such an omitted variable is a country's level of economic development. Our results remain unchanged if we control for the logarithm of GDP per capita in our regressions. Similarly, the business cycle may jointly affect the probability of restructuring and legal protection of investors. For example, the *Law and Order* quality, which is a component

²⁴ The coefficient on the interaction term between *Labor2* and the *Ownership dummy* remains insignificant when the same model specification (columns (4) and (8)) is estimated on the total sample of companies without splitting the sample by *Financier*.

of *Financier*, may be reduced during recessions, when the frequency of asset sales may also increase. Although we control for macroeconomic factors by including time fixed effects, we additionally include the change in the logarithm of GDP per capita as a control variable. Our results remain unaffected. Controlling for inflation and using the change in unemployment level instead of the change in GDP per capita do not affect our results.

Second, we check whether our results on *Asset Sales* are affected by asset liquidations to payoff outstanding debt. Poorly performing firms may be under pressure to repay their debt obligations, especially short term debt, because of creditors' reluctance to roll over debt at maturity. The inability to refinance maturing debt may force firms to liquidate valuable assets, which may partially explain the poor subsequent performance documented in Table VII. Although our data shows that the change in NPPE is not significantly correlated with the change in short term debt or total debt, the occurrence of major asset sales and changes in short term debt are correlated (correlation coefficients of -0.03 and -0.09 for above- and below-the-median creditor protection countries, respectively.) The change in total debt is correlated with *Asset Sales* only for below-the-median creditor protection countries (correlation coefficient of -0.09).

To investigate whether these correlations between *Asset Sales* and changes in short term and total debt affect our results in Table VIII, we re-estimate the base model for *Asset Sales* while replacing leverage with the change in short term or total debt. The results are reported in Table XI. The coefficients on the change in short term debts are insignificant for all specifications, while those for the change in total debt are significant in two of four specifications. Furthermore, comparing the rest of the results in Table XI

with columns (1), (4), (7) and (10) in Table VIII shows that our findings are unaffected. Both the magnitude and the significance of the main explanatory variables are very close to the ones in Table VIII.

Third, we examine the potential impact of financial crises occurred in Mexico, Thailand, Malaysia, Philippines, Indonesia, Korea, Brazil, and Argentina during our sample period. Our sample includes only 57 observations from these countries during the year of the crisis and the following year because, as mentioned earlier, two thirds of the observations in our sample are after 2000. Removing the 57 observations from the analysis does not affect our results.

Fourth, we use different criteria to define our restructuring measures. Two alternative definitions of employee layoffs are used: a drop in the number of employees by more than 15% and by more than 25%. We also use two alternative cutoff points to define major asset sales: a decrease in NPPE by 10% and a decrease by 20%. Management turnover is redefined as the change in all top three officers. The results are robust to these alternative measures of restructuring.

Fifth, instead of conducting our regression analyses on two subsamples based on the strength of *Financier* protection, we use the entire sample and interact the legal variables with a dummy variable equal to one if the country is above the median in terms of *Financier* and zero otherwise. Our conclusions do not change.

Sixth, we obtain similar results when we define *Financier* as the product of the normalized values of the anti-director index, anti-self-dealing index, the creditor index, and the Law and Order index, instead of their sum. For robustness we also use the judicial efficiency measure from Djankov et al. (2003) instead of *Law and Order*. It

assesses the efficiency of the judicial system by measuring the number of procedures from the moment a lawsuit is filed to the time of payment, the number of days to resolve a dispute, and the cost of attorney or administrative fees. The results are similar.

Seventh, as an alternative proxy for the legal power of labor unions, we use the percentage of total work force affiliated with labor unions provided by the International Labor Organization (2005) instead of *Labor2*. Our results are again qualitatively similar. In addition, we investigate whether social security laws (*Labor3*) affect the likelihood of corporate restructuring. We find no statistically significant relation.

Eighth, we use other measures of leverage to check robustness, including the ratio of total liabilities to total assets, long term debt to equity, and long term debt to total assets, because the definition of leverage and how it triggers bankruptcy varies across countries. For example, what is considered short term debt in one country may be regarded as long term debt in another country. Although the magnitude and the statistical significance of the coefficients on leverage and its interaction with the legal variables marginally decrease in some specifications, the main conclusions remain unchanged.

Ninth, as an alternative measure of ownership concentration, we use the sum of equity stakes of all shareholders with ownership greater than 5%. We also define ownership concentration as the percentage of shares held by the largest stockholder because she usually has the most influence. Our results do not change when we use these alternative definitions of ownership concentration.

Tenth, when Worldscope does not provide managerial ownership data, we compare the last names and the first initials of the top three officers with those of the shareholders who own more than 5% of the shares. This adds noise because unrelated people often

have the same last name, especially in East Asia. As a robustness check we drop all such matches for the East Asian companies. Our main results are unaffected.

Eleventh, for employee layoffs or asset sales, a firm enters our sample if its operating performance is above the industry median in the base year and experiences a drop in EBITDA bigger than 50% in the distress year. To ensure that the base year's performance is not a single-year phenomenon, we extend the base period for two years, i.e., the operating performance is above the industry median for the two-year period from $t-2$ to t . We also use 40% and 30% cutoff points. Our main results are robust to these changes in sample selection criteria.

Finally, to control for possible serial correlation due to the fact that some firms enter the sample twice, we repeat our analysis with only the first time they become distressed. The results remain unchanged.

V. Summary and Conclusion

This paper investigates how labor laws, investor protection, and firm-specific variables interact to influence restructuring decisions by firms with a sharp deterioration in operating performance. We find that legal protection of labor and investors has systematic effects on restructuring decisions, with some surprising results. Contrary to the conventional wisdom that asset restructuring by poorly performing firms is value-enhancing, asset sales in weak investor protection countries appear to destroy value. Moreover, the frequency of such asset sales is greater when the strength of investor protection is weaker.

In weak investor protection countries, strong collective relations laws seem to encourage asset sales and to help poorly performing managers retain their jobs,

suggesting possible collusions between management and labor: Management restrains from laying off workers and finances the payroll with the proceeds from value-destroying asset sales, while workers support retention of current management through industrial and/or political actions and by voting with the management. Such collusions are harmful to investors; hence, they are more prevalent when strong collective relations laws are combined with poor investor protection.

Strong employee contract laws also increase the frequency of major asset sales, reflecting the tendency of firms deprived of the flexibility to adjust labor inputs as needed to take more drastic actions during distress. However, the increase in asset sales does not translate into more large scale layoffs, perhaps because the higher cost of firing workers offsets, at least in the short-run, the decrease in employment opportunities from sales of assets. In contrast, strong collective relations laws effectively protect jobs by reducing the incidence of both large scale layoffs and major asset sales, but only in relatively strong investor protection countries. In poor investor protection countries, strong union laws seem to encourage asset sales with no apparent effect on layoffs.

The general theme emerging from our study is that law matters in determining the relative bargaining power among different stakeholders. More importantly, our study demonstrates that investor protection and labor laws cannot be studied in isolation. They are closely intertwined in their influence on firms' responses to the conflicting interests of different stakeholders.

Our results also illustrate that laws often lead to unintended consequences. Strong employment contract laws that induce more major asset sales during distress is one

example. Strong collective relations laws that help poorly performing managers retain their jobs is another.

Although these labor laws may not be optimal ex-post, they may represent equilibrium responses to conflicts among stakeholders in countries subject to different political, social, and legal environments. Furthermore, there are other laws concerning antitrust, consumer protection, environment, and taxes that are intended to protect other stakeholders. These laws may have important intertwining influences on firm behavior during distress, or more broadly, in shaping corporate governance. In addition, political systems, cultural norms, and other institutions also interact with laws and regulations to impact governance. Perhaps the biggest challenge facing corporate governance researchers is to understand the interplay among these various factors to prescribe appropriate policies for countries and companies that are subject to different environments.

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Table I: Number of sample firms and legal variables by country.

The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Law and Order* is the average value over the period 1990-2001, while the *Anti-director*, *Anti-self-dealing*, and *Creditor* indices are constant over time. *Labor1* measures the rigidity of employment contracts, *Labor2* measures the strength of the regulation of collective disputes and labor union power, and *Labor3* measures the strength of social security laws as defined by Botero et al. (2004). A firm is considered distressed if it has a ratio of operating income before depreciation and amortization to total assets (EBITDA/TA) greater than the industry median in year t-1 (base year) and there is a drop of more than 50% in EBITDA in year t (the distressed year).

	Proportion			Anti-	Anti-	Law and			Labor1	Labor2	Labor3
	Number of	Number of	of	director	self-	Creditor	Order	Financier			
	all firm-	distressed	distressed	(revised)	dealing						
	years	firm-years	firms								
Argentina	112	13	0.12	0.5	0.45	0.25	0.54	1.74	0.34	0.58	0.72
Australia	2176	287	0.13	0.67	0.79	0.25	1	2.71	0.35	0.37	0.78
Austria	846	131	0.15	0.42	0.21	0.75	1	2.38	0.5	0.36	0.71
Belgium	1183	148	0.13	0.33	0.54	0.5	1	2.37	0.51	0.42	0.62
Brazil	699	116	0.17	0.83	0.29	0.25	0.63	2	0.57	0.38	0.55
Canada	2444	247	0.10	0.67	0.65	0.25	1	2.57	0.26	0.2	0.79
Chile	579	36	0.06	0.67	0.63	0.5	0.7	2.5	0.47	0.38	0.69
Colombia	169	16	0.09	0.5	0.58	0	0.21	1.29	0.34	0.49	0.81
Denmark	1703	180	0.11	0.67	0.47	0.75	1	2.89	0.57	0.42	0.87
Finland	1141	169	0.15	0.58	0.46	0.25	1	2.29	0.74	0.32	0.79
France	6383	811	0.13	0.5	0.38	0	0.9	1.78	0.74	0.67	0.78
Germany	6650	832	0.13	0.42	0.28	0.75	0.92	2.37	0.7	0.61	0.67
Greece	1147	223	0.19	0.33	0.23	0.25	0.62	1.43	0.52	0.49	0.74
Hong Kong	2149	292	0.14	0.83	0.97	1	0.82	3.62	0.17	0.46	0.81
India	587	54	0.09	0.83	0.55	1	0.42	2.8	0.44	0.38	0.4
Indonesia	836	104	0.12	0.67	0.69	1	0.4	2.76	0.68	0.39	0.18
Ireland	616	79	0.13	0.67	0.79	0.25	0.78	2.49	0.34	0.46	0.71
Israel	207	27	0.13	0.67	0.72	1	0.48	2.87	0.29	0.31	0.81
Italy	2242	292	0.13	0.42	0.39	0.5	0.83	2.14	0.65	0.63	0.76
Japan	21923	2154	0.10	0.58	0.48	0.5	0.9	2.46	0.16	0.63	0.64
South Korea	3014	367	0.12	0.58	0.46	0.75	0.54	2.33	0.45	0.54	0.68
Malaysia	1765	280	0.16	0.83	0.95	1	0.68	3.46	0.19	0.19	0.2
Mexico	369	38	0.10	0.5	0.18	0	0.54	1.22	0.59	0.58	0.51
Netherlands	1756	219	0.12	0.5	0.21	0.5	1	2.21	0.73	0.46	0.63
New Zealand	217	28	0.13	0.67	0.95	0.75	1	3.37	0.16	0.25	0.72
Norway	1292	166	0.13	0.58	0.44	0.5	1	2.52	0.69	0.65	0.83
Pakistan	302	37	0.12	0.67	0.41	1	0.3	2.38	0.34	0.31	0.47
Peru	299	52	0.17	0.58	0.41	0	0.25	1.24	0.46	0.71	0.42
Philippines	609	81	0.13	0.5	0.24	0	0.27	1.01	0.48	0.51	0.49
Portugal	551	78	0.14	0.42	0.52	0.25	0.87	2.06	0.81	0.65	0.74
Singapore	1186	201	0.17	0.83	1	1	0.86	3.69	0.31	0.34	0.46
South Africa	1605	185	0.12	0.83	0.82	0.75	0.44	2.84	0.32	0.54	0.58
Spain	1452	161	0.11	0.83	0.37	0.5	0.78	2.48	0.74	0.59	0.77
Sweden	2146	220	0.10	0.58	0.34	0.5	1	2.42	0.74	0.54	0.84
Switzerland	1679	215	0.13	0.5	0.27	0.25	1	2.02	0.45	0.42	0.82
Taiwan	888	111	0.13	0.5	0.56	0.5	0.85	2.41	0.45	0.32	0.75
Thailand	1078	163	0.15	0.67	0.85	0.75	0.63	2.9	0.41	0.36	0.47
Turkey	599	39	0.07	0.33	0.43	0.5	0.52	1.78	0.4	0.47	0.48
United Kingdom	14984	1428	0.10	0.83	0.93	1	0.86	3.62	0.28	0.19	0.69
United States	13787	647	0.05	0.5	0.65	0.25	1	2.4	0.22	0.26	0.65
Zimbabwe	41	5	0.12	0.67	0.44	1	0.37	2.48	0.25	0.44	0.16
Mean Values	2522	267	0.11	0.6	0.54	0.53	0.73	2.4	0.46	0.45	0.64
Median Values	1147	163	0.13	0.58	0.47	0.5	0.82	2.41	0.45	0.44	0.69
St Deviation	4426	405	0.03	0.15	0.24	0.34	0.26	0.65	0.19	0.14	0.18

Table II: Piece-wise correlation between the legal variables.

The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Law and Order* is the average value over the period 1990-2001, while the *Anti-director*, *Anti-self-dealing*, and *Creditor* indices are constant over time. *Labor1* measures the rigidity of employment contracts, *Labor2* measures the strength of the regulation of collective disputes and labor union power, and *Labor3* measures the strength of social security laws as defined by Botero et al. (2004). *indicates a significance level of 0.05 or lower. p-values appear below the correlation coefficients in parentheses.

	Anti-director (revised)	Anti- self- dealing	Creditor	Law And Order	Financier	Labor1	Labor2	Labor3
Anti-director (revised)	1.000							
Anti-self-dealing	0.8093* (0.000)	1.000						
Creditor	0.6032* (0.000)	0.5740* (0.000)	1.000					
Law-and-Order	-0.0619* (0.000)	0.0722* (0.000)	0.0299* 0.002	1.000				
Financier	0.8139* (0.000)	0.8654* (0.000)	0.8442* (0.000)	0.2801* (0.000)	1.000			
Labor1	-0.4414* (0.000)	-0.5695* (0.000)	-0.2884* (0.000)	-0.0697* (0.000)	-0.4656* (0.000)	1.000		
Labor2	-0.5585* (0.000)	-0.7101* (0.000)	-0.4397* (0.000)	-0.1363* (0.000)	-0.6566* (0.000)	0.3264* (0.000)	1.000	
Labor3	-0.2184* (0.000)	-0.2605* (0.000)	-0.3362* (0.000)	0.4844* (0.000)	-0.1757* (0.000)	0.3112* (0.000)	0.1828* (0.000)	1.000

Table III, Panel A. Summary statistics for firm level variables for base year and distress year

EBITDA is operating income before depreciation and amortization. Leverage is the ratio of (long term debt + short term debt) to total assets. NPPE is net property, plant and equipment. *Layoffs* is equal to one if there is a greater than 20% decrease in the number of employees. *Asset sales* is equal to one if there is a greater than 15% drop in the NPPE. *Management turnover* is equal to one if there is a change in the top two officers of the firm. The differences of all variables (except Leverage) from the base year to the distress year are significant at the 1% level.

	Obs	Mean		Median	
		(Base Yr)	(Distress Yr)	(Base Yr)	(Distress Yr)
Total Assets	10904	341,281,384	252,517,008	2,285,876	1,207,550
EBITDA	10904	41,117,403	5,329,037	1,731,763	51,970
Sales	10904	144,136,826	99,183,869	2,168,990	843,429
Leverage	10904	0.2373	0.238	0.2104	0.2135
Employees	10904	4,562	4,168	931	820
NPPE	10904	49,837,471	37,481,174	517,909	245,356
Short term debt	10904	37,242,789	26,697,060	79,375	43,258
Long term debt	10904	34,051,580	24,415,869	101,224	56,473
Layoffs	10065	0.0495	0.0714	0	0
Asset sales	10777	0.1196	0.1844	0	0
Management turnover	7,358	0.0629	0.0832	0	0

Table III, Panel B. Relations between the restructuring variables

Layoffs is equal to one if there is a greater than 20% decrease in the number of employees. *Asset sales* is equal to one if there is a greater than 15% drop in the NPPE. *Management turnover* is equal to one if there is a change in the top two officers of the firm.

The numbers in parentheses are the unconditional fraction of firms that undertake the respective type of restructuring.

*** indicates significance at the 1% level.

Given there are:	Fraction of firms also undertaking		
	Layoffs (0.0714)	Asset sales (.1844)	Management turnover (.0832)
Layoffs	1.0000	0.5027***	0.0961
Asset sales	0.1916***	1.0000	0.0881
Management turnover	0.0832	0.2043	1.0000

Table IV: Comparison of proportions of firms by restructuring measure in countries in the top quartile and the bottom quartile by legal variable.

The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Labor1* measures the rigidity of employment contracts as defined by Botero et al. (2004). *Labor2* measures the strength of the regulation of collective disputes and labor union power. *Layoffs* is equal to one if there is a greater than 20% decrease in the number of employees. *Asset sales* is equal to one if there is a greater than 15% drop in the NPPE. *Management turnover* is equal to one if there is a change in the top two officers of the firm.

* indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Labor1		Labor2		Financier	
	Top quartile	Bottom quartile	Top quartile	Bottom quartile	Top quartile	Bottom quartile
	(1)	(2)	(3)	(4)	(5)	(6)
Layoffs	0.069***	0.045***	0.044***	0.107***	0.101***	0.062***
Asset Sales	0.333***	0.066***	0.177***	0.139***	0.144***	0.324***
Management Turnover	0.075	0.088	0.079**	0.096**	0.094***	0.072***

Table V, Panel A: Regression analysis using *Employee Layoffs* as the dependent variable

This table reports the results of country random effects logit regressions:

$$\Pr(R_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \beta_5 \text{Lev}_{ik} * \text{Financier}_k + \beta_6 \text{Lev}_{ik} * \text{Labor}_k + \beta_7 \text{Perf}_{ik} * \text{Financier}_k + \sum_{j=8}^9 \beta_j X_{ikj} + \varepsilon_{ik})$$

R_{ik} is *Employee Layoffs* for firm i in country k and $F(\cdot)$ is the logit specification. The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Labor* is either *Labor1* (columns (1)-(4)), which measures the rigidity of employment contracts as defined by Botero et al. (2004), or *Labor2* (columns (5)-(8)), which measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). *Leverage* is measured as the ratio of long term debt plus short term debt divided by total assets. *Own* is the total percentage owned by the three largest shareholders who own more than 5% of the shares. The vector of control variables X_{ijk} includes the change in operating performance (*Perf*) measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and *Size* measured by the logarithm of sales. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the 2-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Layoffs							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financier	0.352*** (0.000)	0.241** (0.017)	0.358*** (0.000)	0.361*** (0.000)	0.163** (0.038)	0.058* (0.090)	0.163** (0.039)	0.168* (0.083)
Labor1	0.066 (0.777)	0.068 (0.770)	0.334 (0.320)	0.064 (0.785)				
Labor2					-1.075*** (0.001)	-1.067*** (0.001)	-1.066** (0.016)	-1.074*** (0.001)
Leverage	0.612*** (0.003)	0.672 (0.414)	1.027** (0.016)	0.612*** (0.003)	0.603*** (0.004)	0.630 (0.443)	0.618** (0.047)	0.603*** (0.004)
Own	0.337* (0.061)	0.249* (0.074)	0.206 (0.318)	0.321* (0.073)	0.415** (0.047)	0.372** (0.038)	0.316 (0.192)	0.397** (0.044)
Size	-0.062*** (0.000)	-0.061*** (0.000)	-0.062*** (0.000)	-0.062*** (0.000)	-0.047*** (0.001)	-0.047*** (0.001)	-0.047*** (0.001)	-0.047*** (0.001)
Performance	-0.452*** (0.000)	-0.451*** (0.000)	-0.452*** (0.000)	-0.490** (0.039)	-0.458*** (0.000)	-0.458*** (0.000)	-0.458*** (0.000)	-0.477** (0.043)
Lev*Financier		0.476* (0.091)				0.457* (0.073)		
Lev*Labor1			1.007 (0.264)					
Lev*Labor2							0.036* (0.074)	
Perf*Financier				-0.014* (0.069)				-0.007 (0.133)
Observations	10013	10013	10013	10013	10013	10013	10013	10013
Pseudo R-squared	0.035	0.036	0.035	0.036	0.037	0.038	0.037	0.037

Table V, Panel B: Regression analysis using Management turnover as the dependent variable

This table reports the results of country random effects logit regressions:

$$\Pr(R_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \beta_5 \text{Lev}_{ik} * \text{Financier}_k + \beta_6 \text{Lev}_{ik} * \text{Labor}_k + \beta_7 \text{Perf}_{ik} * \text{Financier}_k + \sum_{j=8}^9 \beta_j X_{ikj} + \varepsilon_{ik})$$

R_{ik} is *Management Turnover* for firm i in country k and $F(\cdot)$ is the logit specification. The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Labor* is either *Labor1* (columns (1)-(4)), which measures the rigidity of employment contracts as defined by Botero et al. (2004), or *Labor2* (columns (5)-(8)), which measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). *Leverage* is measured as the ratio of long term debt plus short term debt divided by total assets. *Own* is the total percentage owned by the three largest shareholders who own more than 5% of the shares. The vector of control variables X_{ikj} includes the change in operating performance (*Perf*) measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and *Size* measured by the logarithm of sales. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the 2-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Turnover							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financier	0.199** (0.016)	0.252** (0.025)	0.202** (0.015)	0.193** (0.024)	0.115** (0.018)	0.171** (0.040)	0.118* (0.078)	0.107** (0.043)
Labor1	-0.097 (0.692)	-0.096 (0.693)	0.033 (0.926)	-0.095 (0.697)				
Labor2					-0.627* (0.070)	-0.634* (0.067)	-0.530 (0.255)	-0.631* (0.068)
Leverage	0.162* (0.053)	0.805* (0.054)	0.363* (0.063)	0.162* (0.054)	0.148* (0.093)	0.831* (0.084)	0.324* (0.061)	0.148* (0.096)
Own	0.287 (0.389)	0.401 (0.117)	0.371 (0.273)	0.249 (0.451)	0.327* (0.081)	0.261 (0.399)	0.237 (0.416)	0.315* (0.077)
Size	0.018 (0.215)	0.018 (0.210)	0.018 (0.216)	0.018 (0.217)	0.030** (0.037)	0.030** (0.035)	0.030** (0.037)	0.030** (0.038)
Performance	-0.060* (0.083)	-0.061* (0.079)	-0.060* (0.081)	-0.019** (0.024)	-0.063* (0.066)	-0.063* (0.061)	-0.062* (0.068)	-0.007* (0.071)
Lev*Financier		0.246* (0.094)				0.261 (0.164)		
Lev*Labor1			-0.501 (0.606)					
Lev*Labor2							-0.376 (0.764)	
Perf*Financier				-0.015* (0.089)				-0.020 (0.772)
Observations	7309	7309	7309	7309	7309	7309	7309	7309
Pseudo R-squared	0.033	0.034	0.034	0.034	0.039	0.040	0.040	0.039

Table VI. Regression analysis using Layoffs, Management turnover, and Asset sales as the dependent variables and controlling for management ownership.

This table reports the results of country random effects logit regressions:

$$\Pr(R_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \sum_{j=5}^6 \beta_j X_{ikj} + \varepsilon_{ik})$$

R_{ik} is a measure of restructuring: Employee Layoffs in columns (1) and (2), management turnover in columns (3) and (4) and asset sales in columns (5) and (6). *Layoffs* is equal to one if there is a reduction in the number of employees of more than 20%. *Turnover* is equal to one if there is a change in the top two officers. *Asset Sales* is equal to one if there is a reduction in NPPE of more than 15%. $F(\cdot)$ is the logit specification. The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Labor* is either *Labor1* (columns (1), (3) and (5)), which measures the rigidity of employment contracts as defined by Botero et al. (2004), or *Labor2* (columns (2), (4) and (6)), which measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). Leverage is measured as the ratio of long term debt plus short term debt divided by total assets. *Own* is the total percentage owned by the three largest shareholders who own more than 5% of the shares. *Own dummy* is an indicator variable equal to one if any of the top officers owns more than 5% of the shares. The vector of control variables X_{ik} includes the change in operating performance measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and *Size* measured by the logarithm of sales. The number of observations is smaller because data on top officer ownership is not available for all firms in the full sample. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the two-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Layoffs		Turnover		Asset Sales	
	(1)	(2)	(3)	(4)	(5)	(6)
Financier	0.017** (0.036)	0.168** (0.045)	0.103* (0.059)	0.109* (0.069)	-0.241** (0.029)	-0.627*** (0.000)
Labor1	0.137 (0.697)		-0.248 (0.506)		2.669*** (0.000)	
Labor2		-1.901*** (0.000)		-0.215* (0.079)		0.382 (0.321)
Leverage	0.998*** (0.001)	1.001*** (0.001)	0.574* (0.077)	0.562* (0.084)	0.343* (0.078)	0.479* (0.050)
Own	0.251** (0.044)	0.301* (0.091)	0.126 (0.391)	0.207* (0.073)	0.260* (0.059)	0.158 (0.412)
Own dummy	-0.241 (0.371)	-0.255 (0.418)	-0.724** (0.027)	-0.773** (0.031)	-0.457* (0.057)	-0.389** (0.042)
Size	-0.113*** (0.000)	-0.056** (0.041)	-0.007 (0.744)	0.005 (0.853)	-0.131*** (0.000)	-0.162*** (0.000)
Performance	-0.553*** (0.000)	-0.552*** (0.000)	-0.118* (0.089)	-0.119* (0.089)	-0.399*** (0.000)	-0.353*** (0.000)
Observations	3902	3902	2914	2914	4283	4283
Pseudo R-squared	0.052	0.059	0.040	0.041	0.100	0.062

Table VII, Panel A. A comparison of subsequent firm operating performance with and without asset sales for top and bottom Financier quartile countries and percentage of firms dropping from the sample.

The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. This table compares the performance of companies with and without asset sales (*Asales* = 1 and *Asales* = 0, respectively) for the top and bottom *Financier* quartile countries for the distress year *t* and the average performance two years after the distress year – avg (*t*+1,*t*+2). In the top three rows performance is measured by the ratio of operating income before depreciation and amortization to total assets (EBITDA/TA). In rows 4-6 performance is measured by the ratio of sales to total assets (Sales/TA). Rows 7-9 show the percentage of firms dropping from the sample from year *t* to year *t*+2. ***indicates significance at the 1% level, ** indicates significance at the 5% level, and * indicates significance at the 10% level.

	Measure	Top financier quartile		Bottom financier quartile		Top financier – Bottom financier
		Mean (<i>t</i> +1, <i>t</i> +2) – Mean (<i>t</i>)	Median (<i>t</i> +1, <i>t</i> +2) – Median (<i>t</i>)	Mean (<i>t</i> +1, <i>t</i> +2) – Mean (<i>t</i>)	Median (<i>t</i> +1, <i>t</i> +2) – Median (<i>t</i>)	Median
<i>Asales</i> =1	EBITDA/TA	0.797**	0.126***	0.075**	-0.035**	0.161***
<i>Asales</i> =0	EBITDA/TA	0.703**	0.115**	0.662***	0.061***	0.054*
Difference	EBITDA/TA	0.096**	0.011**	-0.587***	-0.096***	0.107***
<i>Asales</i> =1	Sales/TA	-0.017*	0.091**	-0.215*	-0.025*	0.126***
<i>Asales</i> =0	Sales/TA	-0.022*	0.027**	0.005	0.014	0.013*
Difference	Sales/TA	0.005	0.064**	-0.220***	-0.039***	0.113***
<i>Asales</i> =1	Percent dropping from sample	-3.2%		-8.3%		5.1%***
<i>Asales</i> =0	Percent dropping from sample	-3.9%		-2.0%		-1.9%
Difference	Percent dropping from sample	0.7%		-6.3%***		7.0%***

Table VII. Panel B. Multivariate analysis of post-asset sales performance for firms located in countries above and below the median of Financier protection.

This table reports country fixed effects regression estimates of the effect of asset sales (measured by a dummy variable) on the subsequent operating performance of companies located in countries below and above the median of *Financier* protection. The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. The dependent variable is the average performance two years after the distress year. In the first two columns performance is measured by the ratio of operating income before depreciation and amortization to total assets (EBITDA/TA). In the third and fourth columns performance is measured by the ratio of sales to total assets (Sales/TA). Observation numbers vary between tables. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the two-digit level and country fixed effects. P-values are in parentheses. ***indicates significance at the 1% level, ** indicates significance at the 5% level, and * indicates significance at the 10% level.

	Change in EBITDA/TA		Change in Sales/TA	
	Fin<Median	Fin>Median	Fin<Median	Fin>Median
	(1)	(2)	(3)	(4)
Asset sales	-0.286** (0.013)	0.048* (0.069)	-0.041* (0.090)	0.083* (0.072)
Size	-0.149*** (0.000)	-0.131*** (0.000)	-0.041*** (0.000)	-0.060*** (0.000)
Leverage	-0.128 (0.427)	-0.194 (0.142)	0.036 (0.513)	0.074 (0.166)
Own	0.261 (0.529)	0.183 (0.337)	-0.047 (0.214)	-0.058 (0.472)
Performance	-0.066 (0.255)	-0.059* (0.052)	0.058*** (0.003)	0.059*** (0.000)
Observations	1789	2807	1789	2807
Adjusted R-squared	0.118	0.135	0.052	0.041

Table VIII: Regression analysis using Asset Sales as the dependent variable for firms located in countries above and below the median of Financier protection.

This table reports the results of country random effects logit regressions:

$$\Pr(Asales_{ik} = 1) = F(\alpha + \beta_1 Financier_k + \beta_2 Labor_k + \beta_3 Lev_{ik} + \beta_4 Own_{ik} + \beta_5 Lev_{ik} * Financier_k + \beta_6 Lev_{ik} * Labor_k + \sum_{j=7}^8 \beta_j X_{ikj} + \varepsilon_{ik})$$

$Asales_{ik}$ is a measure of asset reduction for firm i in country k . It is an indicator variable that takes a value of 1 if there is a decrease in NPPE by more than 15%. $F(\cdot)$ is the logit specification. The variable $Financier$ is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. $Labor$ is either $Labor1$, which measures the rigidity of employment contracts as defined by Botero et al. (2004), or $Labor2$, which measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). Leverage is measured as the ratio of long term debt plus short term debt divided by total assets. Own is the total percentage owned by the three largest shareholders who own more than 5% of the shares. The vector of control variables X_{ikj} includes the change in operating performance measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and $Size$ measured by the logarithm of sales. Columns (1)-(6) estimate the model for the sub-sample of firms located in countries with above the median financier protection, while columns (7)-(12) estimate the model for the sub-sample of firms located in countries with below the median financier protection. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the 2-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Financier>Median						Financier<Median					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Financier	0.744*** (0.000)	0.821*** (0.000)	0.736*** (0.000)	0.428*** (0.001)	0.492*** (0.002)	0.425*** (0.001)	-0.018* (0.062)	-0.123 (0.437)	0.015 (0.888)	-0.169*** (0.001)	-0.230** (0.027)	-0.168 (0.103)
Labor1	2.114*** (0.000)	2.116*** (0.000)	1.737*** (0.000)				2.581*** (0.000)	2.594*** (0.000)	2.885*** (0.000)			
Labor2				-0.383* (0.058)	-0.368 (0.376)	-0.157 (0.763)				0.629* (0.053)	0.631* (0.052)	0.201* (0.079)
Leverage	0.023** (0.025)	1.094** (0.022)	0.550 (0.310)	0.064* (0.093)	1.007 (0.464)	0.289 (0.607)	0.100*** (0.003)	1.182* (0.091)	0.811 (0.196)	0.167* (0.069)	0.387 (0.709)	0.805 (0.426)
Own	0.428** (0.017)	0.281 (0.166)	0.198 (0.301)	0.202* (0.069)	0.139 (0.387)	0.217 (0.142)	0.241* (0.081)	0.176 (0.219)	0.288 (0.419)	0.302* (0.059)	0.174 (0.188)	0.115 (0.354)
Size	-0.036* (0.062)	-0.036* (0.057)	-0.036* (0.061)	-0.064*** (0.001)	-0.065*** (0.001)	-0.065*** (0.001)	-0.175*** (0.000)	-0.175*** (0.000)	-0.175*** (0.000)	-0.259*** (0.000)	-0.259*** (0.000)	-0.259*** (0.000)
Performance	-0.333*** (0.000)	-0.334*** (0.000)	-0.335*** (0.000)	-0.341*** (0.000)	-0.342*** (0.000)	-0.342*** (0.000)	-0.586*** (0.000)	-0.587*** (0.000)	-0.588*** (0.000)	-0.591*** (0.000)	-0.592*** (0.000)	-0.591*** (0.000)
Lev*Financier		0.346* (0.052)			0.304 (0.486)			-0.621* (0.052)			-0.266 (0.591)	
Lev*Labor1			1.472 (0.224)						-1.191 (0.232)			
Lev*Labor2						0.914 (0.480)						1.692 (0.328)
Observations	5327	5327	5327	5327	5327	5327	4726	4726	4726	4726	4726	4726
Pseudo R-squared	0.043	0.043	0.043	0.030	0.030	0.030	0.162	0.162	0.162	0.134	0.134	0.134

Table IX: Regression analysis using *Employee Layoffs* as the dependent variable for firms located in countries above and below the median of *Financier* protection.

This table reports the results of country random effects logit regressions:

$$\Pr(\text{Layoffs}_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor2}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \beta_5 \text{Lev}_{ik} * \text{Financier}_k + \beta_6 \text{Lev}_{ik} * \text{Labor2}_k + \sum_{j=7}^8 \beta_j X_{ikj} + \varepsilon_{ik})$$

Layoffs_{ik} is a measure of layoffs for firm *i* in country *k*. It is an indicator variable that takes a value of 1 if there is a greater than 20% drop in the number of employees. F(.) is the logit specification. The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Labor2* measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). Leverage is measured as the ratio of long term debt plus short term debt divided by total assets. *Own* is the total percentage owned by the three largest shareholders who own more than 5% of the shares. The vector of control variables *X_{ikj}* includes the change in operating performance measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and *Size* measured by the logarithm of sales. Columns (1)-(3) estimate the model for the sub-sample of firms located in countries with above the median financier protection, while columns (4)-(6) estimate the model for the sub-sample of firms located in countries with below the median financier protection. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the 2-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Financier>Median			Financier<Median		
	(1)	(2)	(3)	(4)	(5)	(6)
Financier	0.243** (0.043)	0.302** (0.047)	0.238 (0.155)	0.045** (0.022)	0.272 (0.256)	0.048 (0.811)
Labor2	-0.094** (0.045)	-0.106** (0.047)	-0.344* (0.065)	-0.420 (0.491)	-0.415 (0.497)	0.433 (0.681)
Leverage	1.063*** (0.000)	1.831 (0.225)	0.728 (0.250)	0.179** (0.021)	-1.868 (0.341)	2.047 (0.255)
Own	0.379** (0.033)	0.352 (0.179)	0.306 (0.418)	0.248** (0.042)	0.215 (0.371)	0.189* (0.064)
Size	-0.080*** (0.000)	-0.081*** (0.000)	-0.081*** (0.000)	-0.013 (0.581)	-0.013 (0.579)	-0.013 (0.594)
Performance	-0.444*** (0.000)	-0.444*** (0.000)	-0.445*** (0.000)	-0.375*** (0.002)	-0.379*** (0.002)	-0.376*** (0.002)
Lev*Financier		0.248 (0.606)			0.966 (0.298)	
Lev*Labor2			0.869* (0.055)			3.269 (0.293)
Observations	4917	4917	4917	4440	4440	4440
Pseudo R-squared	0.042	0.042	0.042	0.013	0.014	0.014

Table X: Regression analysis using *Management turnover* as the dependent variable for firms located in countries above and below the median of *Financier* protection.

This table reports the results of country random effects logit regressions:

$$\Pr(\text{Turnover}_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor2}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \beta_5 \text{Owndummy}_{ik} + \beta_6 \text{Owndummy}_{ik} * \text{Labor2}_{ik} + \beta_7 \text{Lev}_{ik} * \text{Financier}_k + \beta_8 \text{Lev}_{ik} * \text{Labor2}_k + \sum_{j=9}^{10} \beta_j X_{ikj} + \varepsilon_{ik})$$

Turnover_{ik} is a measure of management turnover for firm *i* in country *k*. It is an indicator variable that takes a value of 1 if there is a change in the top two officers. *F(.)* is the logit specification. The variable *Financier* is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. *Labor2* measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). Leverage is measured as the ratio of long term debt plus short term debt divided by total assets. *Own* is the total percentage owned by the three largest shareholders who own more than 5% of the shares. *Own dummy* is an indicator variable equal to one if any of the top officers owns more than 5% of the shares. The vector of control variables *X_{ikj}* includes the change in operating performance measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and *Size* measured by the logarithm of sales. Columns (1)-(4) estimate the model for the sub-sample of firms located in countries with above the median financier protection, while columns (5)-(8) estimate the model for the sub-sample of firms located in countries with below the median financier protection. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the two-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Financier>Median				Financier<Median			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financier	0.084** (0.013)	0.177* (0.092)	0.082 (0.621)	0.257** (0.031)	0.346** (0.015)	0.439** (0.024)	0.346 (0.106)	0.267* (0.059)
Labor2	-0.719 (0.185)	-0.744 (0.171)	-0.799 (0.263)	-0.125 (0.269)	-1.280** (0.026)	-1.282** (0.026)	-1.086* (0.087)	-0.182* (0.071)
Leverage	0.090* (0.068)	1.422 (0.443)	0.030 (0.969)	0.350 (0.429)	0.103** (0.047)	0.946 (0.691)	0.519 (0.722)	0.511 (0.338)
Own	0.481* (0.073)	0.402 (0.391)	0.346 (0.413)	0.149 (0.174)	0.368* (0.084)	0.271 (0.271)	0.189 (0.448)	0.201 (0.281)
Own dummy				-0.522* (0.054)				-2.365* (0.075)
Own dummy*Labor2				0.502 (0.784)				0.871 (0.482)
Size	0.024 (0.307)	0.024 (0.317)	0.024 (0.308)	0.063* (0.077)	0.029 (0.169)	0.029 (0.167)	0.029 (0.168)	-0.084* (0.063)
Performance	-0.067* (0.081)	-0.069* (0.072)	-0.068 (0.278)	-0.172* (0.091)	-0.058* (0.092)	-0.058 (0.397)	-0.058 (0.392)	-0.046 (0.637)
Lev*Financier		0.444 (0.463)				0.390* (0.078)		
Lev*Labor2			0.299 (0.867)				0.733 (0.778)	
Observations	3618	3618	3618	1722	3342	3342	3342	855
Pseudo R-squared	0.021	0.023	0.022	0.022	0.025	0.026	0.026	0.019

Table XI: Regression analysis relating Asset sales to Changes in Short term and Total debt for firms located in countries above and below the median of Financier protection.

This table reports the results of country random effects logit regressions:

$$\Pr(Asales_{ik} = 1) = F(\alpha + \beta_1 Financier_k + \beta_2 Labor_k + \beta_3 ChangeDebt_{ik} + \beta_4 Own_{ik} + \sum_{j=5}^6 \beta_j X_{ikj} + \varepsilon_{ik})$$

$Asales_{ik}$ is a measure of asset reduction for firm i in country k . It is an indicator variable that takes a value of 1 if there is a decrease in NPPE by more than 15%. $F(\cdot)$ is the logit specification. The variable $Financier$ is the sum of the *Anti-director* index, *Anti-self-dealing* index, *Creditor* index and *Law and Order* index. $Labor$ is either $Labor1$, which measures the rigidity of employment contracts as defined by and Botero et al. (2004), or $Labor2$, which measures the strength of the regulation of collective disputes and labor union power as defined by Botero et al. (2004). $ChangeDebt$ is either Change in Short Term debt, which is measured as the difference of short term debt from year t-1 to year t or Change in Total Debt, which is measured as the difference of total debt from year t-1 to year t. Own is the total percentage owned by the three largest shareholders who own more than 5% of the shares. The vector of control variables X_j includes the change in operating performance measured as the change in the ratio of operating income before depreciation and amortization divided by total assets (EBITDA/TA), and Size measured by the logarithm of sales. Columns (1) - (4) estimate the model for the sub-sample of firms located in countries with above the median financier protection, while columns (5) - (8) estimate the model for the sub-sample of firms located in countries with below the median financier protection. All specifications are estimated with robust standard errors clustered by country and include time fixed effects, industry fixed effects at the two-digit level and country random effects. P-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level and *** indicates significance at the 1% level.

	Financier>Median				Financier<Median			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financier	0.737*** (0.000)	0.744*** (0.000)	0.426*** (0.001)	0.426*** (0.001)	-0.018* (0.063)	-0.017* (0.070)	-0.169** (0.011)	-0.168** (0.013)
Labor1	2.101*** (0.000)	2.115*** (0.000)			2.581*** (0.000)	2.571*** (0.000)		
Labor2			-0.402* (0.064)	-0.376* (0.066)			0.622* (0.055)	0.617* (0.058)
Change in ST Debt	-0.013 (0.224)		-0.009 (0.143)		-0.011 (0.153)		-0.006 (0.167)	
Change in T Debt		-0.015* (0.071)		-0.008 (0.711)		-0.016* (0.091)		-0.009 (0.436)
Own	0.359* (0.093)	0.329* (0.074)	0.285* (0.059)	0.314 (0.371)	0.430* (0.066)	0.288* (0.072)	0.364* (0.085)	0.257 (0.128)
Size	-0.038** (0.046)	-0.035* (0.066)	-0.067*** (0.001)	-0.064*** (0.001)	-0.175*** (0.000)	-0.177*** (0.000)	-0.258*** (0.000)	-0.260*** (0.000)
Performance	-0.333*** (0.000)	-0.334*** (0.000)	-0.340*** (0.000)	-0.342*** (0.000)	-0.587*** (0.000)	-0.585*** (0.000)	-0.592*** (0.000)	-0.590*** (0.000)
Observations	5327	5327	5327	5327	4726	4726	4726	4726
Pseudo R-squared	0.044	0.043	0.031	0.030	0.162	0.163	0.134	0.135