

Labor and Corporate Governance: International Evidence from Restructuring Decisions

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ABSTRACT

Our results highlight the importance of interaction among management, labor, and investors in shaping corporate governance. We find that strong union laws protect not only workers but also underperforming managers. Weak investor protection combined with strong union laws are conducive to worker–management alliances, wherein poorly performing firms sell assets to prevent large-scale layoffs, garnering worker support to retain management. Asset sales in weak investor protection countries lead to further deteriorating performance, whereas in strong investor protection countries they improve performance and lead to more layoffs. Strong union laws are less effective in preventing layoffs when financial leverage is high.

MUCH OF THE RESEARCH IN LAW AND FINANCE FOCUSES on the role of legal protection of investors in shaping corporate governance.¹ However, investors are but one of many stakeholders. Other stakeholders who participate in governance include labor and management. Labor receives legal protection with substantial variation across countries, and its self-interests often conflict with those of investors, at least in the short run. How do firms respond to these conflicting interests? The answer depends on stakeholders' relative influence on the decision making process, which varies across countries due to political and social factors (Roe (2003)). When investors have greater influence, higher priority is given to enhancing capital value. When labor has greater influence, employee welfare may receive higher priority over value enhancement (Tirole (2001)).

This paper investigates how the two stakeholders' relative influence and firm-level variables interact to affect restructuring decisions when firms suffer a sudden, sharp deterioration in operating performance. We proxy for stakeholders' relative influence at the country level by the strength of legal protection

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¹ See for example, La Porta et al. (2000, 2002), Durnev and Kim (2005), and Doidge et al. (2004, 2007). For a survey of the literature, see Denis and McConnell (2003).

of investors and labor, using measures compiled by Djankov et al. (2005), Djankov, McLiesh, and Shleifer (2006), and Botero et al. (2004). We examine firms at the onset of declining performance in order to avoid firms with prolonged poor performance that may already have undertaken restructuring measures. Our focus on poorly performing firms is motivated by the possibility that conflicts among stakeholders become more acute when the size of the economic pie shrinks. However, it is not obvious how such conflicts affect the nature and the likelihood of restructuring. On the one hand, conflicts may lead to further deterioration of the firm; on the other hand, the stakeholders may rally around the crisis to improve the firm's chance of survival.

We consider three types of restructuring measures: large-scale employee layoffs, top management turnover, and major asset sales. Previous studies suggest that each of these improves stock price and subsequent operating performance.² However, part or all of the shareholder gains may arise at the expense of other stakeholders (Shleifer and Summers (1988)). The sacrificing stakeholders may therefore seek to block these restructuring measures. For example, workers may object to investors' attempts to replace underperforming management if they fear a new management team would slash jobs, wages, and benefits. If labor laws grant sufficient power to workers to block such actions, the incumbent management may form an alliance with workers to maintain the status quo by forgoing value-enhancing restructuring measures resisted by workers.

We argue such an alliance is plausible in countries with strong union power and weak investor protection and discuss the economic links between the competing incentives of management, labor, and investors. The theoretical discussion leads to testable hypotheses about how the nature and the likelihood of restructuring decisions are affected by the relative legal strength of labor vis-à-vis investors. We test the hypotheses on a sample of 9,923 firms (10,947 firm-years) at the onset of sharply declining operating performance in 41 developed and emerging economies over the period 1993 to 2004.

We find that poorly performing firms in stronger investor protection countries are more likely to undertake large-scale worker layoffs and replace top management than those in weaker investor protection countries. These restructuring actions are followed by superior operating performance in all legal environments. Major asset sales are different, however. We observe more asset sales when investor protection is either very strong or very weak. Asset sales in strong investor protection countries are followed by superior operating performance, whereas asset sales in weak investor protection countries are followed by inferior subsequent operating performance.³

The likelihood of value-reducing asset sales increases as collective bargaining and labor relations laws grant more power to labor unions, suggesting that these asset sales are countenanced by workers. In addition, underperforming

² See, for example, Ofek (1993), Kaplan (1994), Kang and Shivdasani (1997), and Denis and Kruse (2000).

³ This result is not due to firms selling assets because of their continuing poor operating performance. Our sample of asset sales is restricted to those that occur at the onset of a sharp decline in operating performance by firms that previously performed above the industry median.

top managers in low investor protection countries are more likely to retain their jobs as union power increases. These results point toward management–worker alliances motivated by a mutual desire to retain jobs. For such an alliance to work, management needs funds to minimize layoffs and wage cuts. Lacking other means to raise the necessary funds, poorly performing firms sell assets to forestall layoffs even when doing so hurts subsequent operating performance. Indeed, asset sales in weak investor protection countries do not lead to layoffs, whereas in strong investor protection countries asset sales predict layoffs.

Other interpretations of our results include: (1) asset markets are undeveloped in weak investor protection countries; (2) assets are sold at fire sales to pay off creditors; and (3) poorly performing managers blame strong unions to avoid accountability. Although these stories partially explain our results, none is fully consistent with the data. We also show that our results concerning layoffs and asset sales are not explained by differences in conditions existing prior to performance declines.

Another important facet of labor laws relates to employment contract laws. Rigid employment laws make it difficult for a firm to adjust labor costs. When a firm bears a negative revenue shock, the firm's inability to make adequate adjustments to its labor costs exacerbates the decline in the value of its assets. Firms operating with this imposed inflexibility may sell their most affected divisions and assets to other firms that can either circumvent the labor regulation or find higher-valued uses through synergies. Consistent with this conjecture, we observe more major asset sales when employment laws are more protective.

Firm-level variables also matter in restructuring decisions. Firms with higher leverage are more likely to undertake all three types of restructuring. This disciplining role of leverage shows more bite when investor protection is stronger. More interesting, strong union laws are less effective in preventing large-scale layoffs when firms have higher financial leverage. Ownership concentration also is positively related to all three types of restructuring. For management turnover, the positive relation is significant only when top managers are not major shareholders: A major shareholder–manager is not likely to dismiss herself for poor performance. Asset sales exhibit a similar pattern: Major shareholder–managers are less likely to sell assets, perhaps because they are reluctant to reduce private benefits associated with a larger asset base.

In Section I, we discuss relevant theoretical issues and develop the hypotheses. Section II describes the empirical design, sample construction, and data. Section III presents empirical results and robustness checks. We make concluding remarks in Section IV.

I. Legal Environment and Restructuring Decisions: Development of Hypotheses

To analyze the economic links between the competing incentives of workers, investors, and management of poorly performing firms, we assume that (1) shareholders and creditors share a common objective to preserve and enhance

capital value,⁴ (2) top management and workers want to retain their jobs, and (3) top managers are opportunistic, weighing the relative influence of investors and workers and siding with the group that can best help them retain their own jobs.

When firms suffer from poor operating performance, shareholders may pressure management to undertake restructuring actions to improve firm performance. Creditors also may demand corrective measures, especially when debt covenants are violated (Roberts and Sufi (2006)). Whether these demands will be executed depends on the firm's governance. If the firm is investor friendly, it is likely to undertake value-enhancing measures; if it is worker friendly, the firm may refrain from actions deemed detrimental to employee welfare.

Whether governance favors investors or workers is determined by both firm- and country-specific factors (Durnev and Kim (2005)). We first consider country factors, as proxied by investor and labor protection laws. We hypothesize that layoffs are more likely with stronger investor protection and weaker union laws. Large-scale worker layoffs tend to lead to direct conflicts between investors and workers. Opportunistic top managers facing potential dismissal for poor performance will weigh the relative influence of investors and workers and side with those with greater influence.

How the legal environment affects management turnover is less straightforward. Although the literature has focused on investors' abilities to remove underperforming managers, workers also can influence the outcome. Replacing top management is an attempt by investors or workers to change the direction of the firm by bringing in new leadership. If a change is necessary for value enhancement, stronger investor rights should increase the likelihood of top management turnover. Workers will not oppose changes if the new management is expected to get the firm out of trouble without employee sacrifice. However, poor performance may be due partly to managers' tendencies to overpay workers (Bertrand and Mullainathan (1999)) and their reluctance to trim an unproductive workforce, because of their desire for the quiet life (Bertrand and Mullainathan (2003)). Workers will be protective of such labor-friendly management because new managers brought in to improve performance may force layoffs and reduce wages.

Managers may even collude with workers for mutual protection. Pagano and Volpin (2005) develop a model in which managers collude with workers by bribing them with above market wages to thwart hostile takeover attempts. This collusion hypothesis is supported by evidence provided in Rauh (2006) and Kim and Ouimet (2008).⁵ Similar collusion is possible when firms suffer poor performance. Facing potential dismissal for poor performance, top managers may

⁴ The first assumption simplifies our theoretical analyses and allows us to work with a single investor protection index for most of our empirical analyses. However, it ignores possible conflicts between shareholders and creditors regarding the timing of restructuring due to shareholders' convex claims on the firm's cash flows and creditors' concave claims. We address this issue by examining the sensitivity of our empirical results to separate indices of shareholder and creditor rights. We also examine the timing issue in the robustness section.

⁵ Rauh (2006) finds that employee stock ownership through defined contribution plans has a deterrent effect on takeover probability, and Kim and Ouimet (2008) document a substantial increase

form an alliance with labor by abstaining from worker layoffs and wage cuts. Workers, in turn, may help retain such managers if they have sufficient power to affect the decision.

Workers influence management retention through several channels. Botero et al. (2004) state “workers, or unions, or both have a right to appoint members to the Board of Directors” (p. 1349) in Austria, China, Czech Republic, Denmark, Egypt, Germany, Norway, Slovenia, and Sweden. Such board representation gives labor a direct means to influence managerial compensation and retention. For example, German firms with more than 2,000 employees are required to have 50% worker representation on their supervisory boards responsible for selecting chief executives and reviewing their performance.⁶ In fact, Botero et al. include the right to board representation as a measure of the strength of union power in their labor law index.

Workers also indirectly influence top management retention. They may attempt to retain labor-friendly management by opposing liquidation in favor of reorganization with current management intact, or they may lobby for government bailouts to curtail the urgency for layoffs and management turnover. To achieve these goals, workers may organize strikes against mergers or other methods designed to introduce new management. These direct and indirect worker influences should be more effective when workers are empowered through strong union laws.

An alliance between top management and workers may not result from explicit collusion. Managers simply may feel reluctant to cut wages or fire workers with whom they have developed working relationships. This reluctance would be reinforced when unions have the legal means to prevent investor attempts to oust incumbent management. These implicit alliances are expected to be more effective in preventing management turnover in countries with stronger labor union power and weaker investor protection.

The recent Volkswagen scandal in Germany, a country with strong union laws,⁷ illustrates such a management–labor alliance. Volkswagen’s top management was under pressure from investors for the firm’s poor operating performance: Its EBITDA to total assets ratio was the lowest among the four major automakers in Germany over the 2002 to 2005 period, and it was 13th out of 17 major automakers worldwide over the 2003 to 2005 period.⁸ In 2005, German state prosecutors accused the top managers of bribery for paying labor representatives on its supervisory board as much as \$36,000 per individual for

in employee compensation following the adoption of large-scale employee stock ownership plans. The compensation increases are concentrated in firms incorporated in states with business combination statutes, which make Employee Stock Ownership Plans (ESOPs) more effective antitakeover device against hostile takeover attempts.

⁶ The supervisory board has the power to appoint and dismiss management board members, who report to the supervisory board in the two-tiered board system. See Gorton and Schmid (2000) and Fauver and Fuerst (2006) for further discussion of the German board system.

⁷ The strength of German union laws ranks seventh among our sample of 41 countries, while the strength of its investor protection is slightly below the median (see Table II).

⁸ The other German automakers are BMW, DaimlerChrysler, and Porsche, and the worldwide list includes Fiat, Ford, GM, Honda, Hyundai, Kia, Mazda, Mitsubishi, Nissan, Peugeot, Renault, Suzuki, and Toyota.

pleasure trips to Brazil in return for their support. According to a July 18, 2005 *Business Week* article, “CEOs and top managers depend on votes from the labor reps to be reappointed. Instead of making tough decisions on restructuring or job cuts, German managers are inclined to delay or avoid change and instead curry favor with union bosses sitting on their boards, often to the detriment of their companies” (52).

The third type of restructuring, asset sales, is generally considered to enhance value. If a firm sells assets to redeploy underutilized resources to higher-valued uses, asset sales should increase shareholder value. Workers, on the other hand, will resist asset sales if they lead to layoffs or diminish the value of their future claims, such as underfunded health-care and pension liabilities.

Workers may not resist asset sales, however, if the sales are part of a delaying tactic to maintain the status quo through a management–worker alliance. To avoid wage cuts and worker layoffs, management may have to sell assets. Because poorly performing firms are typically cash constrained, selling underperforming assets may not be sufficient. They may have to resort to selling assets even if doing so destroys synergies with the remaining assets, thereby reducing value. Even when assets are sold at the fair market value without affecting synergies, using the proceeds to delay necessary cuts in payroll will reduce value. Value-reducing asset sales will be blocked by investors if they have the ability to do so.

Since a management–worker alliance requires strong union power, the likelihood of value-reducing asset sales is greater in countries with weaker investor protection and stronger union laws. Conversely, value-enhancing asset sales are more likely in countries with stronger investor protection and weaker union laws.

Value-reducing asset sales represent a governance failure. They exacerbate poor operating performance, eventually hurting most stakeholders in the long run, including workers. There are two possible reasons for such a governance failure. First, if a great deal of uncertainty surrounds exogenous variables affecting operating performance, managers and workers may rationally decide on costly delaying actions that would allow them to wait for an outcome, albeit with a low probability, which will more than make up for the value lost due to asset sales. This is analogous to Jensen and Meckling’s (1976) asset substitution hypothesis in which shareholders may choose a higher risk, lower NPV project. Delays may also provide managers and workers time to locate alternative jobs.

The second reason for a governance failure is a behavioral bias based on the theory that people delay immediate-cost activities and engage in immediate-reward activities too soon (O’Donoghue and Rabin (1999)). That is, management delays restructuring decisions with immediate cost to workers and managers even though doing so may lead to an even worse outcome. One way to avoid such a governance failure is for management and workers to bond themselves to actions expected in strong investor protection and weak union law countries. However, Doidge, Karolyi, and Stulz (2007) argue, with supporting evidence, that such mechanisms are either unavailable or prohibitively expensive in countries with poor investor protection.

To summarize the main hypotheses, we list the likelihood of each restructuring measure for different combinations of investor protection and labor union laws:

The Likelihood of Restructuring under Different Legal Regimes

Investor Protection	Union Laws	Employee Layoffs	Management Turnover	Value-Enhancing Asset Sales	Value-Reducing Asset Sales
Strong Weak	Weak Strong	High Low	High Low	High Low	Low High

Note that these predictions apply only to union laws. Employment contract laws are another important component of labor laws that may affect restructuring decisions. Botero et al. (2004) construct an index measuring the rigidity of employment laws, which includes the costs of hiring and firing workers, reducing wages, and changing working hours. We hypothesize that inflexible employment laws encourage asset sales during corporate distress. Consider a firm suffering a sharp drop in revenue. If inflexible laws prevent the firm from making the necessary cut in labor costs, the value of its assets utilizing the workforce will decline. The firm may be able to realize higher values by selling the affected assets to other firms that can find a means to circumvent the regulation or redeploy the assets to higher-valued uses.

II. Empirical Design, Sample Construction, and Data

A. Empirical Design

We estimate country random effects logit regression models. The dependent variable is equal to one if there are large-scale layoffs, management turnover, or major asset sales. The independent variables are investor protection, labor laws, financial leverage, and ownership concentration. Control variables are firm size and the previous year's operating performance. We include leverage because Ofek (1993) and Kang and Shivdasani (1997) find that leverage increases investors' ability to force large-scale layoffs and management turnover. Ownership concentration is included because it helps shareholders internalize the benefits of taking action. We expect ownership concentration to be positively related to value-enhancing restructuring actions.

We also account for the interactions between leverage and investor protection, and leverage and labor laws. The disciplining role of leverage should depend on the legal protection of creditors and shareholders because strong creditor rights make the threat of bankruptcy more credible, while strong shareholder rights make it more likely for firms to take advantage of the threat of bankruptcy. Thus, we expect the leverage effect to be stronger as investor protection increases.

Leverage also has a role in strengthening shareholders' bargaining position vis-à-vis labor. Bronars and Deere (1991) show that financial leverage reduces

the power of labor unions because the increased threat of bankruptcy due to leverage makes it easier to extract concessions from unions. Thus, we hypothesize that the ability of union laws to deter layoffs and asset sales becomes weaker with higher financial leverage.

Labor laws consist of two components: union laws and employee contract laws. They have a correlation coefficient of 0.3264. Correlations among investor protection, the interaction terms, and the labor variables are all high. In order to properly identify the coefficients on the labor variables, regressions are estimated separately for each.

For all specifications we perform the Breusch and Pagan (1980) test. The test statistics suggest the presence of unobserved country-level heterogeneity. Thus, when regressions contain country-level explanatory variables, we use country random effects; otherwise, we use country fixed effects. We also use year 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 affecting restructuring decisions.⁹ Following Norton, Wang, and Ai (2004), we correct the coefficients on the interaction terms for the nonlinearity of the logit specification.

B. Sample Construction

The primary source of our firm-level data is Worldscope. We identify 25,698 industrial companies with sufficient data to conduct our tests from 41 countries over the period 1993 to 2004.¹⁰ From these firms we look for initially healthy firms that suffered a sharp drop in operating performance, measured by EBITDA/TA, where EBITDA is earnings before interest, taxes, depreciation, and amortization, and TA is total assets. Table I contains the descriptions of all variables used in the paper. We use an accounting-based measure of operating performance instead of a stock price-based measure, because stock markets are forward looking and market values reflect the likelihood to undertake restructuring measures. For example, a more shareholder-friendly company may experience a smaller drop in valuation for the same decline in operating performance because of higher anticipation of value-enhancing restructuring.

For layoffs and asset sales, our definition of poorly performing firms follows Kang and Shivdasani (1997). We require that the company initially have a positive, above-industry median EBITDA/TA in the base year and experience a drop of more than 50% in EBITDA in the following year. This selection procedure yields 8,493 companies (10,904 firm-years).

To identify poorly performing top management, we use a different criterion based on a relative performance measure. Consider the airline industry, which

⁹ We do not include time slopes because that requires interacting explanatory variables with year indicator variables, exacerbating the multicollinearity problem.

¹⁰ We exclude the firm-years with missing data for any of the relevant variables. We also exclude firm-years in which sales, total assets, and the number of employees are zero and leverage ratios are greater than one or negative.

Table I
Variable Descriptions

Variable	Description
	<i>Legal variables (A higher score indicates stronger legal protection)</i>
<i>Antidirector</i>	Equal to the sum of six subindices at the country level 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 (measured at the country level, time invariant). (Source: Djankov et al. (2005))
<i>Anti-self-dealing</i>	Measures 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 (measured at the country level, time invariant). (Source: Djankov et al. (2005))
<i>Shareholder</i>	Equal to the sum of normalized values of <i>Antidirector</i> and <i>Anti-self-dealing</i> . (Source: Djankov et al. (2005))
<i>Creditor</i>	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 (measured at the country level, annual frequency, lagged by one period). (Source: Djankov et al. (2006))
<i>Law and order</i>	Measures the strength and impartiality of the legal system and of the popular observance of the law (measured at the country level, annual frequency, lagged by one period). (Source: <i>International Country Risk Guide</i>)
<i>Financier</i>	Equal to the sum of the normalized values of <i>Antidirector</i> , <i>Anti-self-dealing</i> , <i>Creditor</i> , and <i>Law and Order</i> (measured at the country level, annual frequency). (Source: Djankov et al. (2005); Djankov et al. (2006))
<i>Emp_Cont</i>	Measures the difficulty and the costs of reducing wages and working hours, and covers regulations concerning overtime and use of temporary workers (measured at the country level, time invariant). (Source: Botero et al. (2004))
<i>Union</i>	Assesses the legal protection of labor unions and the regulation of collective disputes (measured at the country level, time invariant). (Source: Botero et al. (2004))
<i>Soc_Sec</i>	Measures the strength of social security laws (measured at the country level, time invariant). (Source: Botero et al. (2004))
	<i>Restructuring variables (All restructuring variables are employed at the annual frequency)</i>
<i>Layoffs</i>	An indicator variable equal to one if the decrease in the number of employees is greater than 20%. (Source: Worldscope)
<i>Management turnover</i>	An indicator variable equal to one if there is a change in the top two officers of the firm. (Source: Worldscope, Amadeus, the ISI Emerging Markets Database, local stock exchanges, and company websites)
<i>Asset sales</i>	An indicator variable equal to one if there is a drop in NPPE greater than 15%. (Source: Worldscope)

(continued)

Table I—Continued

Variable	Description
	<i>Firm-level control variables (All firm-level variables are employed at the annual frequency)</i>
EBITDA	Operating income before depreciation and amortization. (Source: Worldscope)
TA	Total assets. (Source: Worldscope)
Size	Equal to the logarithm of sales. (Source: Worldscope)
Lev	Equal to the ratio of (long-term debt + short-term debt) to total assets. (Source: Worldscope)
NPPE	Net property, plant, and equipment. (Source: Worldscope)
Own	The total percentage owned by the three largest shareholders who own more than 5% of the shares. (Source: Worldscope, Amadeus, the ISI Emerging Markets Database, local stock exchanges, and company websites)
Mgmt / Own	An indicator variable equal to one if any of the top officers owns more than 5% of the shares or shares the same last name and first initial with any of the major shareholders who own more than 5%. (Source: Worldscope, Amadeus, the ISI Emerging Markets Database, local stock exchanges, and company websites)
Performance	Equal to the change in EBITDA/TA. (Source: Worldscope)

suffered a big drop in EBITDA after 9/11. When all airlines suffer losses, the performance of an airline's CEO should be judged relative to that of her rivals, not by an absolute measure. Thus, we follow Denis and Kruse (2000) and classify top management as underperforming if a company's EBITDA/TA is initially above the industry median and falls to the bottom quartile of its industry in the following year.¹¹ This yields 6,988 firms (7,358 firm-years) with underperforming management. As a robustness check, we repeat the analyses using a sample based on the absolute measure of a 50% drop in EBITDA for management turnover. The conclusions do not change.

Table II presents the total number of firm-years with available data for each of the 41 countries and the number of poorly performing firm-years with at least a 50% drop in EBITDA. The proportion of distressed firms is fairly evenly distributed across countries with a mean of 11%. Two-thirds of the distressed firms are observed between 2000 and 2004 because the number of firms and countries covered by Worldscope increases dramatically after 2000.

¹¹ Because some countries have an insufficient number of firms that conform to the traditional definition of industry grouping, to identify underperforming management we use a more flexible industry definition. 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. Similarly, 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 an 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.

Table II
Number of Sample Firms and Legal Variables by Country

	Number of Firm-Years	Number of Distressed Firm-Years	Proportion of Distressed Firms	Antidirector (Revised)	Anti-Self- Dealing	Creditor	Law and Order	Financier	Union	Emp.Cont	Soc.Sec
Argentina	112	13	0.12	0.5	0.45	0.25	0.79	1.99	0.58	0.34	0.72
Australia	2,176	287	0.13	0.67	0.79	0.75	1.00	3.21	0.37	0.35	0.78
Austria	846	131	0.15	0.42	0.21	0.75	1.00	2.38	0.36	0.5	0.71
Belgium	1,183	148	0.13	0.33	0.54	0.50	0.86	2.23	0.42	0.51	0.62
Brazil	699	116	0.17	0.83	0.29	0.25	0.37	1.74	0.38	0.57	0.55
Canada	2,444	247	0.10	0.67	0.65	0.25	1.00	2.57	0.2	0.26	0.79
Chile	579	36	0.06	0.67	0.63	0.50	0.83	2.63	0.38	0.47	0.69
Colombia	169	16	0.09	0.5	0.58	0.00	0.26	1.34	0.49	0.34	0.81
Denmark	1,703	180	0.11	0.67	0.47	0.75	1.00	2.89	0.42	0.57	0.87
Finland	1,141	169	0.15	0.58	0.46	0.25	1.00	2.29	0.32	0.74	0.79
France	6,383	811	0.13	0.5	0.38	0.00	0.84	1.72	0.67	0.74	0.78
Germany	6,650	832	0.13	0.42	0.28	0.75	0.92	2.37	0.61	0.7	0.67
Greece	1,147	223	0.19	0.33	0.23	0.25	0.53	1.34	0.49	0.52	0.74
Hong Kong	2,149	292	0.14	0.83	0.97	1.00	0.81	3.61	0.46	0.17	0.81
India	587	54	0.09	0.83	0.55	0.50	0.67	2.55	0.38	0.44	0.4
Indonesia	836	104	0.12	0.67	0.69	0.50	0.36	2.22	0.39	0.68	0.18
Ireland	616	79	0.13	0.67	0.79	0.25	0.99	2.70	0.46	0.34	0.71
Israel	207	27	0.13	0.67	0.72	0.75	0.83	2.97	0.31	0.29	0.81
Italy	2,242	292	0.13	0.42	0.39	0.50	0.93	2.24	0.63	0.65	0.76
Japan	21,923	2,154	0.10	0.58	0.48	0.49	0.91	2.46	0.63	0.16	0.64
South Korea	3,014	367	0.12	0.58	0.46	0.75	0.78	2.57	0.54	0.45	0.68
Malaysia	1,765	280	0.16	0.83	0.95	0.75	0.52	3.05	0.19	0.19	0.2
Mexico	369	38	0.10	0.5	0.18	0.00	0.36	1.04	0.58	0.59	0.51
Netherlands	1,756	219	0.12	0.5	0.21	0.75	1.00	2.46	0.46	0.73	0.63
New Zealand	217	28	0.13	0.67	0.95	1.00	1.00	3.62	0.25	0.16	0.72
Norway	1,292	166	0.13	0.58	0.44	0.50	1.00	2.52	0.65	0.69	0.83

(continued)

Table II—Continued

	Number of Firm-Years	Number of Distressed Firm-Years	Proportion of Distressed Firms	Antidirector (Revised)	Anti-Self- Dealing	Creditor	Law and		Union	Emp.Cont	Soc.Sec
							Order	Financier			
Pakistan	302	37	0.12	0.67	0.41	0.25	0.50	1.83	0.31	0.34	0.47
Peru	299	52	0.17	0.58	0.41	0.00	0.50	1.49	0.71	0.46	0.42
Philippines	609	81	0.13	0.5	0.24	0.25	0.45	1.44	0.51	0.48	0.49
Portugal	551	78	0.14	0.42	0.52	0.25	0.86	2.04	0.65	0.81	0.74
Singapore	1,186	201	0.17	0.83	1	0.75	1.00	3.58	0.34	0.31	0.46
South Africa	1,605	185	0.12	0.83	0.82	0.75	0.36	2.76	0.54	0.32	0.58
Spain	1,452	161	0.11	0.83	0.37	0.50	0.73	2.44	0.59	0.74	0.77
Sweden	2,146	220	0.10	0.58	0.34	0.26	1.00	2.18	0.54	0.74	0.84
Switzerland	1,679	215	0.13	0.5	0.27	0.25	0.96	1.98	0.42	0.45	0.82
Taiwan	888	111	0.13	0.5	0.56	0.50	0.67	2.23	0.32	0.45	0.75
Thailand	1,078	163	0.15	0.67	0.85	0.52	0.83	2.87	0.36	0.41	0.47
Turkey	599	39	0.07	0.33	0.43	0.50	0.65	1.91	0.47	0.4	0.48
United Kingdom	14,984	1,428	0.10	0.83	0.93	1.00	1.00	3.76	0.19	0.28	0.69
United States	13,787	647	0.05	0.5	0.65	0.25	1.00	2.40	0.26	0.22	0.65
Zimbabwe	41	5	0.12	0.67	0.44	1.00	0.27	2.37	0.44	0.25	0.16
Mean values	2,522	267	0.11	0.6	0.54	0.49	0.76	2.39	0.45	0.46	0.64
Median values	1,147	163	0.13	0.58	0.47	0.50	0.83	2.38	0.44	0.45	0.69
Std Deviation	4,426	405	0.03	0.15	0.24	0.29	0.25	0.64	0.14	0.19	0.18

Direct comparison of the accounting-based data across countries is problematic because of different accounting standards. However, a key distinguishing characteristic in legal environments across countries is accounting standards; thus, to some extent, our country-level measures of investor and labor protection control for such differences. Additionally, within-country industry indicator variables 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 cutoff points to construct the sample (i.e., a 30% and 40% drop instead of the 50% drop in EBITDA/TA). The main results are robust to different cutoff points.

C. Measures of Corporate Restructuring

Our measures of top management turnover, large-scale employee layoffs, and major asset sales are not as refined as those used in single-country studies.¹² Our study covers 41 countries and news searches for information in non-English speaking countries would require knowledge of local languages.¹³ Thus, we construct *management turnover* from 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 $t + 1$, where year t is the distress year. We use the removal of the top two officers rather than only the top officer for two reasons. First, the turnover is more likely to be forced rather than voluntary if the two top executives leave the company. Second, Worldscope provides only officer 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. For a robustness check, we require that all three top executives in year $t - 1$ do not appear as executives in year t or year $t + 1$. The results are similar. We include year $t + 1$ because replacing top management may take time.

The variable *Layoffs* takes the value of one if a company experiences more than a 20% drop in the number of employees from year $t - 1$ to year t or $t + 1$. The variable *Asset sales* takes a value of one if a company experiences more than a 15% drop in its NPPE from year $t - 1$ to year t or $t + 1$. Although these

¹² We exclude financial restructuring such as debt renegotiation, debt forgiveness, or debt equity swaps because they represent restructuring claims between investors without much direct involvement of workers. We also exclude bankruptcies and mergers because of data unavailability for the 41 countries. The impact of these omissions is likely to be very small. Only 1.58% of our sample firms disappear during the year of distress (0.61%) and the following year (0.97%), which may be due to bankruptcy, mergers, or Worldscope's decision to stop covering them for other reasons. The low percentage of disappearance reflects the fact that the firms were outperforming their industry rivals prior to the year of distress and that the performance drop is sudden, not prolonged.

¹³ This language problem prevents us from examining the announcement effects of restructuring decisions. Unlike other international studies with identifiable dates through sources written in English (e.g., the listing date of foreign stocks in the U.S. by Foerster and Karolyi (1999)), identifying announcement dates for our sample of firms would require searching newspapers and media reports in the local language. This is practically impossible because of our large sample size covering 41 countries.

cutoff points are somewhat arbitrary, they are based on previous findings.¹⁴ 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. Because NPPE is measured in local currency, the changes are not affected by exchange rate changes.

There may be other sources of noise in *Layoffs*. 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. If data for other countries have similar problems, our *Layoffs* may underestimate the true extent of employee reduction. This problem is somewhat mitigated by our inclusion of year $t + 1$ in defining *Layoffs*. Any remaining underestimation weakens the power of our tests.

It is also possible that accounting write-offs may lead to an overestimate of *Asset sales*. Our use of changes in NPPE to measure asset sales mitigates this 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 to scrapping equipment also reduce NPPE; however, these actions are precisely what we want to capture as asset restructuring.

D. Legal Variables

Our measure of investor protection considers both the de jure and de facto aspects of regulation. We define the variable *Shareholder* to be equal to the sum of normalized values of the revised *Antidirector* index and the *Anti-self-dealing* index in Djankov et al. (2005). Both indices measure minority shareholder protection against controlling shareholders' actions that would hurt shareholder value. We use the Djankov et al. (2006) creditor index, *Creditor*, for legal protection of creditor rights. This index is updated yearly. For these and all other legal variables, a higher number indicates stronger protection. These legal 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, which is updated monthly. We take yearly averages of this index. Both *Creditor* and *Law and Order* are lagged by 1 year from the distress year.

These four legal variables are normalized on a scale of zero to one and are reported in Table II for each country.¹⁵ Most of these variables are highly

¹⁴ 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 sale 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%).

¹⁵ The variables *Creditor* and *Law and Order* reported in Table II are the yearly averages over the period 1993 to 2003. Unlike these indices, the revised *Antidirector* index and the *Anti-self-dealing* index are time invariant, as are the labor law indices. However, it is comforting that Djankov, McLiesh, and Shleifer (2006) find "...creditor rights are remarkably stable over time, contrary to the hypothesis that legal rules are converging." (p. 1) Furthermore, two-thirds of our sample firm-years cover a relatively short period of time, 2000 to 2004, making the results less sensitive

positively correlated with each other. To mitigate potential multicollinearity problems arising from these correlations and to combine their different attributes, we take the sum of their normalized values to create a single measure of investor protection, *Financier*, which also is reported in Table II. For a robustness check, we use only the revised *Antidirector* index or only the *Anti-self-dealing* index with *Creditor* and *Law and Order* to measure *Financier*. We also use the product of the four variables instead of their sum. The results are robust.

The data for labor regulations come from Botero et al. (2004), who classify labor laws into three major country-level indices. The first index, *Emp.Cont*, measures the rigidity of employment contracts laws. The second index, *Union*, assesses the legal protection of labor unions and the regulation of collective disputes. Strong collective relations laws strengthen union power. The third index, *Soc.Sec*, measures the strength of social security laws.¹⁶ Botero et al. (2004) show that social security laws are closely related to GDP per capita and reflect a country's level of economic development.¹⁷

These labor law indices and their correlations with other legal variables are reported in Table II and Panel A of Table III, respectively. All labor indices are positively correlated with each other and are negatively correlated with almost all components of investor protection.

E. Firm-Level Variables

Data for firm-level variables also come from Worldscope. We use the logarithm of sales to measure the size of the firm. Larger firms are more likely to be unionized, may be slower in reacting to external shocks, and have a better chance to be bailed out by the government during distress, all of which may affect restructuring decisions. Large firms also receive more public attention and are more likely to be covered by Worldscope. It also may be easier for smaller firms to lay off 20% of employees and sell 15% of assets.

Ownership data come from Worldscope, Amadeus, the ISI Emerging Markets Database, local stock exchanges, and company websites. We proxy for ownership concentration by the variable *Own*, the sum of the equity stakes of the three largest shareholders, each with more than 5% of the firm shares. None of the firms in our sample lists the government as a direct owner with more than 5% ownership. The ownership data for top executives is available only for 2002 to 2004. We average the 3 years and use it as a proxy for the actual managerial

to changes in laws over time. Finally, to the extent that these time-invariant indices incorrectly measure the legal environment at the time of declining performance, the noise blurs the distinction in legal variables across countries, weakening the power of our tests.

¹⁶ We find no statistically significant relation between *Soc.Sec* and the likelihood of any of the three restructuring measures. Consequently, we do not report results dealing with *Soc.Sec*.

¹⁷ GDP per capita is also closely related to the degree of stock market openness and *Law and Order*, which Table III shows is highly correlated with social security laws. Bekaert, Harvey, and Lundblad (2005) find that stock market liberalization leads to a 1% increase in annual economic growth and the effect is greater for countries with higher *Law and Order*.

Table III
Correlations between Legal Variables and Summary Statistics
of Firm Variables

Panel A shows correlations between legal variables. All coefficients are significant at the 1% level. Panel B shows summary statistics for firm-level variables for base year and distress year. The differences between distress year and base year are significant at the 1% level for all variables except *Leverage*.

Panel A: Correlations between the Legal Variables								
	Antidirector (Revised)	Anti-Self- Dealing	Creditor	Law and Order	Financier	Emp_Cont	Union	Soc_Sec
Antidirector (revised)	1.000							
Anti-self-dealing	0.809	1.000						
Creditor	0.534	0.532	1.000					
Law and Order	-0.044	0.087	0.200	1.000				
Financier	0.777	0.831	0.854	0.373	1.000			
Emp_Cont	-0.441	-0.570	-0.278	-0.083	-0.469	1.000		
Union	-0.559	-0.710	-0.412	-0.149	-0.634	0.326	1.000	
Soc_Sec	-0.218	-0.261	-0.133	0.467	-0.083	0.311	0.183	1.000

Panel B: Summary Statistics for Firm-Level Variables for Base Year and Distress Year					
	Observations	Mean		Median	
		(Base Year)	(Distress Year)	(Base Year)	(Distress Year)
Total assets	10,904	341,281,384	252,517,008	2,285,876	1,207,550
EBITDA	10,904	41,117,403	5,329,037	1,731,763	51,970
Sales	10,904	144,136,826	99,183,869	2,168,990	843,429
Leverage	10,904	0.237	0.238	0.210	0.214
Employees	10,904	4,562	4,168	931	820
NPPE	10,904	49,837,471	37,481,174	517,909	245,356
Short-term debt	10,904	37,242,789	26,697,060	79,375	43,258
Long-term debt	10,904	34,051,580	24,415,869	101,224	56,473
Layoffs	10,065	0.050	0.071	0	0
Asset sales	10,777	0.120	0.184	0	0
Management turnover	7,358	0.063	0.083	0	0

ownership for the rest of the period.¹⁸ All firm-level variables are winsorized at the 1% level.

Table III, Panel B provides summary statistics for the sample firms with a drop greater than 50% in EBITDA. It reports the mean and median of firm-level variables for the base and distress years, which show that all measures concerning size, profitability, number of employees, and dollar amount of outstanding debt drop significantly from the base year to

¹⁸ Two-thirds of the distressed firms (7,269 firm-years) come from 2000 to 2004, reducing the noise in this proxy variable.

Table IV
Average Proportions of Poorly Performing Firms by Restructuring Type in Top- and Bottom-Quartile Countries by Legal Variable

The statistical significance in the differences between top and bottom quartiles is indicated by * for significance at the 10% level, ** for significance at the 5% level, and *** for significance at the 1% level.

	Emp.Cont			Union			Financier		
	Quartile		Diff	Quartile		Diff	Quartile		Diff
	Top (1)	Bottom (2)		Top (4)	Bottom (5)		Top (7)	Bottom (8)	
Layoffs	0.069	0.045	0.024***	0.044	0.107	−0.063***	0.099	0.042	0.057***
Asset sales	0.333	0.066	0.267***	0.177	0.139	0.038***	0.144	0.254	−0.110***
Management turnover	0.075	0.088	−0.013	0.079	0.096	−0.017**	0.093	0.076	0.017**

the distress year.¹⁹ The variables *Layoffs*, *Asset sales*, and *Management turnover* all increase significantly from the base year to the distress year. Asset sales and layoffs are significantly correlated with each other: Of 1,988 major asset sales, 659 involve layoffs of more than 20% of employees. In contrast, management turnover is uncorrelated with either asset sales or layoffs.

III. Empirical Results

A. Univariate Analysis

To see how corporate restructuring decisions vary across legal environments, we divide the countries into quartiles in terms of legal protection of investors and labor. Table IV compares the average proportion of poorly performing firms undertaking layoffs, asset sales, and management turnover between the top and bottom quartiles. It reveals several noteworthy patterns.

First, large-scale layoffs and major asset sales are more frequent in countries with more rigid employment laws. Workers appear to fare worse during corporate distress under highly protective employment laws.

Second, when union laws are strong, we observe significantly fewer employee layoffs and management turnovers, indicating that strong union laws increase job security not only for employees but also for underperforming managers. Strong union laws are also associated with more asset sales, implying that some asset sales are sanctioned by unions.

Third, strong investor protection is associated with more employee layoffs and increased management turnover, consistent with the notion that layoffs

¹⁹ The number of observations for *Layoffs*, *Asset sales*, and *Management turnover* was smaller than the total number of observations because of missing data for employees, NPPE, and officer names for 2 consecutive years in *Worldscope*. In addition, *Management turnover* comes from a sample based on a different definition of poor performance.

and management turnover are, in general, value enhancing. However, we observe significantly fewer asset sales in strong investor protection countries. This counters the widely held view that asset sales enhance value because we should observe more, not less, value-enhancing decisions when investors enjoy strong legal protection.

We check whether this result on asset sales is related to our treatment of shareholders and creditors as one. Although shareholders and creditors share a common objective to enhance/preserve capital value, they may differ on the timing of asset sales because shareholders have convex claims on the cash flows whereas creditors have concave claims. Thus, we separate *Financier* into *Shareholder* and *Creditor*. We then examine the frequency of asset sales for different configurations of bottom and top quartiles by shareholder and creditor protection. That is, we conduct a 2×2 analysis, where the rows represent the top and bottom quartiles of *Creditor* and the columns represent the top and bottom quartiles of *Shareholder*. We find no difference between firms in the top creditor and bottom shareholder protection quartiles and firms in the top shareholder and bottom creditor quartiles. Also, the firms in the top quartiles for both creditor and shareholder protection show significantly fewer asset sales than those in the bottom quartiles for both creditor and shareholder protection. In sum, the results on asset sales are insensitive to separate treatment of shareholder and creditor protection.

B. Multivariate Analysis

In this section, we investigate how the likelihood of each restructuring measure is related to the legal protection of investors and workers, leverage, and ownership concentration. We first report results concerning employee layoffs and management turnover, followed by asset sales. We also investigate how investor protection and union laws interact in affecting restructuring decisions.

B.1. Employee Layoffs and Management Turnover

Table V reports the results of country random effect logit regressions in which the dependent variable is equal to one if there are large-scale layoffs (Panel A) or if there is management turnover (Panel B). The effects of legal variables are largely consistent with the univariate results. Stronger investor protection is associated with a higher likelihood of layoffs and management turnover, demonstrating investors' greater ability to force poorly performing firms to cut labor costs and bring in new leadership. According to our estimates, a firm in the lowest quartile of investor protection has a 5.31% (7.21%) likelihood of employee layoffs (management turnover), while an otherwise similar firm in the top quartile has a 9.83% (9.50%) likelihood. Also as expected, the strength of collective relations laws (*Union*) is associated with a lower likelihood of employee layoffs. A firm in a bottom-quartile country in *Union* has a 10.25% likelihood of

Table V
Likelihood of Employee Layoffs or Management Turnover

Panel A shows results of country random effects logit regressions using employee layoffs as the dependent variable. Specifically:

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

where R_{ik} is *Layoffs* for firm i in country k and $F(\cdot)$ is the logit specification. *Labor* is either *Union* (columns 1–3), or *Emp_Cont* (columns 4–6). The vector of control variables X_{ijk} includes *Performance* and *Size*. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects at the two-digit level, and country random effects. The p -values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level.

Panel A: Likelihood of Employee Layoffs						
	Labor Is Union			Labor Is Emp_Cont		
	(1)	(2)	(3)	(4)	(5)	(6)
Financier	0.162** (0.031)	0.054* (0.095)	0.162** (0.031)	0.348*** (0.000)	0.241** (0.017)	0.352*** (0.000)
Union	−1.087*** (0.001)	−1.088*** (0.001)	−1.072** (0.014)			
Emp_Cont				0.081 (0.732)	0.085 (0.721)	0.337 (0.319)
Leverage	0.605*** (0.004)	0.618 (0.444)	0.630* (0.058)	0.615*** (0.003)	0.606 (0.455)	1.013** (0.017)
Own	0.437** (0.047)	0.359** (0.031)	0.336 (0.217)	0.342** (0.076)	0.215** (0.088)	0.209 (0.372)
Size	−0.047*** (0.001)	−0.047*** (0.001)	−0.047*** (0.001)	−0.062*** (0.000)	−0.062*** (0.000)	−0.062*** (0.000)
Performance	−0.457*** (0.000)	−0.457*** (0.000)	−0.457*** (0.000)	−0.449*** (0.000)	−0.449*** (0.000)	−0.450*** (0.000)
Lev * Financier		0.457* (0.072)			0.456* (0.087)	
Lev * Union			0.058* (0.095)			
Lev * Emp_Cont						0.965 (0.284)
Observations	10,013	10,013	10,013	10,013	10,013	10,013
Pseudo- R^2	0.037	0.038	0.037	0.035	0.035	0.035

(continued)

large-scale employee layoffs, while an otherwise similar firm in the top quartile has a 5.04% likelihood.

The interaction between *Union* and leverage is significantly positive for *Layoffs*, revealing that the deterrent effect of strong union laws on layoffs is curtailed by high leverage. Apparently, the increased threat of bankruptcy stemming from high leverage increases shareholders’ bargaining position vis-à-vis labor, weakening union laws’ ability to reduce layoffs.

Table V—Continued
Likelihood of Employee Layoffs or Management Turnover

Panel B shows results of country random effects logit regressions using management turnover as the dependent variable. Specifically:

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

where R_{ik} is *Layoffs* for firm i in country k and $F(\cdot)$ is the logit specification. *Labor* is either *Union* (columns 1–3), or *Emp_Cont* (columns 4–6). The vector of control variables X_{ijk} includes *Performance* and *Size*. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects at the two-digit level, and country random effects. The p -values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level.

Panel B: Likelihood of Management Turnover						
	Labor Is Union			Labor Is Emp_Cont		
	(1)	(2)	(3)	(4)	(5)	(6)
Financier	0.104 (0.210)	0.188* (0.097)	0.106 (0.199)	0.183** (0.026)	0.268** (0.016)	0.186** (0.025)
Union	−0.666** (0.047)	−0.664** (0.048)	−0.570 (0.213)			
Emp_Cont				−0.110 (0.657)	−0.110 (0.659)	0.005 (0.988)
Leverage	0.148* (0.094)	1.117* (0.097)	0.323 (0.601)	0.163* (0.052)	1.144 (0.218)	0.343 (0.439)
Own	0.302* (0.094)	0.255 (0.369)	0.241 (0.380)	0.273 (0.401)	0.444 (0.18)	0.351 (0.273)
Size	0.030** (0.035)	0.031** (0.032)	0.030** (0.035)	0.017 (0.246)	0.017 (0.228)	0.017 (0.248)
Performance	−0.062 (0.169)	−0.063 (0.163)	−0.062 (0.171)	−0.059 (0.192)	−0.059 (0.186)	−0.059 (0.191)
Lev * Financier		0.376 (0.284)			0.381* (0.081)	
Lev * Union			−0.374 (0.765)			
Lev * Emp_Cont						−0.451 (0.641)
Observations	7,309	7,309	7,309	7,309	7,309	7,309
Pseudo- R^2	0.039	0.040	0.040	0.033	0.034	0.034

Panel B shows that union laws also protect management. A firm in a bottom-quartile country in *Union* has a 9.67% likelihood of management turnover, while an otherwise similar firm in the top quartile has a 7.62% likelihood of turnover. When estimated separately for low investor protection countries (in Table X), where a management–worker alliance is more likely, the difference becomes much larger.

The results on the firm-specific variables indicate that both leverage and poor performance increase the likelihood of layoffs. Moreover, the interaction

between *Leverage* and *Financier* is positive and significant for three of the four specifications. The disciplining role of leverage seems to have more bite with stronger investor protection.

Ownership concentration is positively and significantly related to layoffs, suggesting that concentrated ownership improves investors' ability to reduce workforce during corporate distress. However, its coefficient on management turnover is mostly insignificant. We suspect the insignificance is due to some top managers also being large shareholders.²⁰ Thus, we add a manager/owner indicator variable, *Mgmt/Own*, to the regressions in Table VI, which reports estimates for all three restructuring measures. Columns 3 and 4 indicate that management turnover is less likely when top officers are also major stockholders. The coefficient on *Own* becomes significant with *Union*, which controls for the negative correlation between *Union* and management turnover. Higher ownership concentration helps remove underperforming top managers only when they are not major shareholders.

The last two columns in Table VI show that the management ownership indicator also has a significant negative effect on asset sales. Major shareholder-managers seem to be less inclined to sell assets, perhaps because their private benefits of control decrease with fewer assets under their control.

B.2. Asset Sales

The last two columns of Table VI also confirm the univariate finding that there are more asset sales in weaker investor protection countries. We entertain three possible explanations. First, assets are sold to finance the current payroll to appease workers in a management-worker alliance. Second, what appear to be asset sales is a diversion of corporate resources by management or controlling shareholders for their own private benefits. These types of asset grabbing (tunneling) are more likely in weak investor protection countries (Johnson et al. (2000), Shleifer and Wolfenzon (2002), Doidge, Karolyi, and Stulz (2004), and Durnev and Kim (2005)).

Third, firms in poor investor protection countries may be smaller and therefore more likely to sell assets during performance declines. This is unlikely because we control for firm size in the regression. The data also tell a different story: Our sample firms in poor investor protection countries are larger than those in strong protection countries, whether firm size is measured by total assets, sales, or the number of employees.²¹ Although this may be due to the way Worldscope selects companies from different countries, size cannot explain the negative relation between asset sales and investor protection.

²⁰ Volpin (2002) finds that the likelihood of CEO turnover for Italian companies depends on whether the top executive is (a family member of) the controlling shareholder.

²¹ 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 number of employees was 675 (3,282) and 727 (4,014), respectively. We reach the same conclusion when we break the sample by the median strength of investor protection.

Table VI
Likelihood of Layoffs, Management Turnover, or Asset Sales,
Controlling for Major Shareholder–Top Manager

This table reports the results of country random effects logit regressions using Layoffs, Management turnover, or Asset sales as the dependent variable, while controlling for major shareholder-top manager:

$$\Pr(R_{ik} = 1) = F(\alpha + \beta_1 \text{Financier}_k + \beta_2 \text{Labor}_k + \beta_3 \text{Lev}_{ik} + \beta_4 \text{Own}_{ik} + \beta_5 \text{Mgmt/Own}_{ik} + \sum_{j=6}^7 \beta_j X_{ijk} + \varepsilon_{ik})$$

where R_{ik} is a measure of restructuring: *Layoffs* in columns 1 and 2, *Turnover* in columns 3 and 4 and *Asset Sales* in columns 5 and 6. *Labor* is either *Emp_Cont* (columns 1, 3, and 5), or *Union* (columns 2, 4, and 6). The vector of control variables X_{ijk} includes *Performance* and *Size*. The number of observations is smaller because data on top officer ownership are not available for all firms in the full sample. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects at the two-digit level, and country random effects. The 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	
	Emp_Cont (1)	Union (2)	Emp_Cont (3)	Union (4)	Emp_Cont (5)	Union (6)
Financier	0.092** (0.034)	0.227** (0.044)	0.091* (0.094)	0.089* (0.096)	−0.333*** (0.003)	−0.742*** (0.000)
Emp_Cont	0.047 (0.896)		−0.335 (0.382)		2.549*** (0.000)	
Union		−1.902*** (0.000)		−0.352* (0.079)		0.333 (0.363)
Leverage	0.997*** (0.001)	0.999*** (0.001)	0.572* (0.078)	0.555* (0.087)	0.337* (0.085)	0.460* (0.059)
Own	0.229** (0.044)	0.298* (0.093)	0.099 (0.377)	0.215* (0.085)	0.271* (0.092)	0.166 (0.438)
Mgmt/Own	−0.272 (0.402)	−0.243 (0.459)	−0.709** (0.041)	−0.736** (0.037)	−0.415* (0.064)	−0.388* (0.052)
Size	−0.117*** (0.000)	−0.056** (0.041)	−0.015 (0.490)	0.004 (0.883)	−0.134*** (0.000)	−0.164*** (0.000)
Performance	−0.546*** (0.000)	−0.551*** (0.000)	−0.111* (0.095)	−0.113* (0.093)	−0.397*** (0.000)	−0.356*** (0.000)
Observations	3,902	3,902	2,914	2,914	4,283	4,283
Pseudo- R^2	0.052	0.060	0.041	0.041	0.102	0.068

Thus, we investigate the first two possibilities by examining postasset sales performance. Table VII, Panel A compares the change in performance of firms with asset sales to those without asset sales, for countries in the top and bottom quartile in investor protection. The change in performance is measured by subtracting the distress year's performance from the average performance in the 2-year period following the year of distress. The table shows the change in performance of the median firm, where performance is measured by EBITDA/TA

(rows 1–3) and Sales/TA (rows 4–6), with rows 3 and 6 showing the difference in performance between the median firm with and the median firm without asset sales. We report the median firm because of high skewness. Comparing the mean firms leads to the same conclusions.

The results are striking. In terms of operating profit (EBITDA/TA), the median firm with asset sales ($ASales = 1$) in the top financier quartile countries shows significant improvement in its postdistress performance, and the improvement is significantly greater than that for the median firm without asset sales ($ASales = 0$). For the median firms in the bottom-quartile countries, the results are the opposite. The median firm with asset sales shows further deterioration in performance, whereas the median firm without asset sales shows significant improvement in postdistress performance. Comparing asset turnover (Sales/TA) yields similar patterns. Selling assets improves asset utilization (relative to firms without asset sales) in the top investor protection countries, and worsens asset utilization in the bottom investor protection countries.

Finally, these differences in subsequent performance seem to be related to the frequency of firms' disappearance from the sample. The last three rows show that in the bottom-quartile countries, significantly more firms with asset sales disappear from the sample than firms without asset sales. 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 results on asset sales are robust to controlling for other firm characteristics, we relate postdistress performance in terms of $EBITDA/TA$ and $Sales/TA$ to *Asset sales*, while controlling for firm size, leverage, ownership concentration, and performance during the distress year. The regressions are estimated separately for high and low investor protection countries (divided by the median). Unlike the other regressions, we use country fixed effects because none of the explanatory variables is measured at the country level.

Panel B of Table VII reports results with *Asset sales*, *Layoffs*, or *Turnover* as the key independent variable. The results on *Asset sales* are consistent with those in Panel A.²² Its coefficient is significantly negative for weak investor protection countries, whether the dependent variable is operating profit or asset turnover, confirming that these asset sales hurt a firm's subsequent operating performance. By contrast, the coefficient is significantly positive for strong investor protection countries for both dependent variables, implying that these asset sales improve subsequent operating performance.²³

²² The sample size is substantially smaller than other regressions because we require at least 4 consecutive years of data per company and a large fraction of our sample firms appear for the first time during the last 3 years of our sample period.

²³ Of the four control variables, the most noticeable is size, which shows a significant negative correlation regardless of how postdistress performance is measured and of the strength of investor

Table VII
Effects of Asset Sales, Layoffs, or Management Turnover on Operating Performance in Strong versus Weak Investor Protection Countries

Panel A shows the change in operating performance and percentage of firms dropping from the sample for firms with and without asset sales (*Asales* = 1 and *Asales* = 0, respectively) located in top or bottom *Financier* quartile countries. The change in performance is measured by subtracting performance in the distress year *t* from the average performance in the 2-year period following the distress year – avg Performance (*t* + 1, *t* + 2). In rows 1–3, 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. Median values are reported in rows 1–6. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level.

Panel A: Operating Performance Following Asset Sales or No Asset Sales				
Measure	Top Financier Quartile		Bottom Financier Quartile	
	Avg Performance (<i>t</i> + 1, <i>t</i> + 2) – Performance (<i>t</i>)		Avg Performance (<i>t</i> + 1, <i>t</i> + 2) – Performance (<i>t</i>)	
EBITDA/TA				Top Financier – Bottom Financier
Asales = 1	(1)	0.122***	–0.041**	0.163***
Asales = 0	(2)	0.117**	0.058***	0.059*
Difference	(3)	0.005**	–0.099***	0.104***
Sales/TA				
Asales = 1	(4)	0.080**	–0.019*	0.099***
Asales = 0	(5)	0.029**	0.013	0.016*
Difference	(6)	0.064**	–0.039***	0.083***
Percent Dropping from Sample				
Asales = 1	(7)	–3.4%	–8.7%	5.3%***
Asales = 0	(8)	–4.2%	–2.6%	–1.6%
Difference	(9)	0.8%	–6.1%***	6.9%***

Panel B reports country fixed effects regression estimates of the effect of asset sales, employee layoffs, or management turnover on subsequent operating performance of companies located in countries below and above the median of *Financier* protection. The dependent variable is the change in average operating performance over the 2-year period following the distress year. In columns 1, 2, 5, 6, 9, and 10 performance is measured by the ratio of operating income before depreciation and amortization to total assets (EBITDA/TA). In columns 3, 4, 7, 8, 11, and 12 performance is measured by the ratio of sales to total assets (Sales/TA). Observation numbers vary between columns. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects at the two-digit level, and country fixed effects. The *p*-values are in parentheses. * indicates significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level.

Panel B: Operating Performance Following Asset Sales, Layoffs, or Management Turnover												
	Change in EBITDA/TA		Change in Sales/TA		Change in EBITDA/TA		Change in Sales/TA		Change in EBITDA/TA		Change in Sales/TA	
	Fin < Med (1)	Fin > Med (2)	Fin < Med (3)	Fin > Med (4)	Fin < Med (5)	Fin > Med (6)	Fin < Med (7)	Fin > Med (8)	Fin < Med (9)	Fin > Med (10)	Fin < Med (11)	Fin > Med (12)
Asset sales	-0.077* (0.058)	0.126* (0.051)	-0.019* (0.063)	0.086* (0.093)								
Layoffs					0.213* (0.072)	0.217** (0.027)	0.098* (0.050)	0.017 (0.671)				
Turnover									0.183* (0.059)	0.060* (0.066)	0.005* (0.068)	0.009* (0.073)
Size	-0.124*** (0.000)	-0.139*** (0.000)	-0.060*** (0.000)	-0.057*** (0.000)	-0.129*** (0.000)	-0.136*** (0.000)	-0.061*** (0.000)	-0.056*** (0.000)	-0.152*** (0.000)	-0.120*** (0.000)	-0.008* (0.072)	-0.015*** (0.000)
Leverage	-0.108 (0.451)	-0.242* (0.073)	0.036 (0.546)	0.056 (0.298)	-0.156 (0.295)	-0.346** (0.013)	0.021 (0.737)	0.054 (0.332)	-0.001 (0.995)	-0.259* (0.087)	0.045 (0.292)	0.034 (0.347)
Own	0.280 (0.387)	0.127 (0.328)	-0.109 (0.426)	-0.087 (0.491)	0.349 (0.201)	0.142 (0.482)	-0.058 (0.419)	-0.102 (0.231)	0.289 (0.339)	0.094 (0.301)	-0.073 (0.284)	-0.089 (0.422)
Performance	-0.055 (0.267)	-0.070* (0.098)	0.034 (0.103)	0.056*** (0.001)	-0.050 (0.320)	-0.032 (0.493)	0.034 (0.108)	0.062*** (0.001)	-0.012 (0.850)	0.012 (0.826)	0.029* (0.058)	-0.025* (0.062)
Observations	2,097	2,821	2,097	2,821	1,996	2,597	1,996	2,597	1,390	1,861	1,390	1,861
R ²	0.040	0.037	0.050	0.041	0.044	0.041	0.053	0.040	0.048	0.029	0.015	0.012

The results also show positive coefficients on *Layoffs* and *Management turnover* in both strong and weak investor protection countries. Unlike asset sales, the performance-improving effects of layoffs and management turnover do not depend on investor protection.²⁴

Because of the distinctly different effects of asset sales between strong and weak investor protection countries, we estimate the likelihood of asset sales separately for countries with above- and below-median investor protection. The results are reported in Table VIII. They show that the relation between investor protection and the likelihood of asset sales differs sharply between the two sets of countries. The relation is significantly positive in strong investor protection countries and significantly negative in weak investor protection countries. There are more asset sales when investor protection is either very strong or very weak.

The table also shows that employment contract laws are significantly positively related to asset sales for both sets of countries, illustrating that inflexible employment laws encourage asset sales during distress. Our result parallels that of Besley and Burgess (2004), who find that Indian states with stronger labor regulations attract less investment. In our case the discouraging effect of employment laws on investment takes the form of more divestment of existing assets during distress.

The interaction term between leverage and *Financier* switches signs depending on whether investor protection is high or low. In high investor protection countries, leverage improves investors' ability to force value-enhancing asset restructuring. In low investor protection countries, the leverage effect seems to work to the detriment of investors. As leverage makes poorly performing firms more financially constrained, it reinforces the tendency to engage in value-reducing asset sales.

B.3. Interaction between Union Laws and Investor Protection

Table VIII also shows that the relation between union laws and asset sales differs sharply depending on the strength of investor protection. With strong investor protection, strong union laws seem to discourage asset sales. With weak investor protection, stronger union laws lead to more asset sales, suggesting that workers sanction them because the proceeds help minimize layoffs and wage cuts.²⁵

protection. Perhaps smaller firms are better able to recover from distress because they tend to have higher managerial ownership, less unionized workforces, and more flexibility.

²⁴ We also repeat the analysis in Panel A of Table VII for layoffs and management turnover. The results (unreported) confirm that both layoffs and management turnover improve the subsequent operating performance regardless of investor protection.

²⁵ Sometimes more than one restructuring action is taken at a given time. We identify cases where only one action is taken and reestimate regressions. The results are similar for "pure" layoffs and "pure" management turnover (not reported). For "pure" asset sales, however, the coefficients on the legal variable become somewhat more significant both statistically and economically. For example, when we replace *Asset sales* with pure asset sales for estimation in Table VIII, the coefficient on

Table VIII
Joint Effects of Investor and Labor Protection on the Likelihood
of Asset Sales

This table shows results of country random effects logit regressions using Asset Sales as the dependent variable for firms located in countries above and below the median of Financier protection. Specifically:

$$\Pr(Asales_{ik} = 1) = F(\alpha + \beta_1 Financier_k + \beta_2 Labor_k + \beta_3 Lev_{ik} + \beta_4 Own_{ik} + \beta_5 Lev_{ik} * Financier_k + \sum_{j=6}^7 \beta_j X_{ikj} + \varepsilon_{ik})$$

$Asales_{ik}$ is Asset Sales for firm i in country k . $F(\cdot)$ is the logit specification. $Labor$ is either *Emp_Cont* (Columns 1–2 and 5–6), or *Union* (Columns 3–4 and 7–8). The vector of control variables X_{ikj} includes *Performance* and *Size*. Columns 1–4 estimate the model for the subsample of firms located in countries with above the median *Financier*, while columns 5–8 estimate the model for the subsample of firms located in countries with below the median *Financier*. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects, at the two-digit level, and country random effects. The 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	0.715*** (0.000)	0.877*** (0.000)	0.053* (0.064)	0.131* (0.081)	-0.310*** (0.004)	-0.361** (0.025)	-0.497*** (0.000)	-0.528*** (0.001)
Emp_Cont	2.666*** (0.000)	2.657*** (0.000)			2.296*** (0.000)	2.297*** (0.000)		
Union			-0.450* (0.089)	-0.462 (0.176)			1.580*** (0.000)	1.581*** (0.000)
Leverage	0.012* (0.062)	2.245** (0.016)	0.016* (0.096)	2.592* (0.088)	0.135** (0.046)	0.319 (0.767)	0.200* (0.062)	0.074 (0.944)
Own	0.318* (0.078)	0.174 (0.316)	0.197* (0.071)	0.105 (0.331)	0.309** (0.034)	0.337 (0.145)	0.375* (0.077)	0.217 (0.259)
Size	-0.044** (0.021)	-0.045** (0.019)	-0.089*** (0.000)	-0.089*** (0.000)	-0.178*** (0.000)	-0.178*** (0.000)	-0.236*** (0.000)	-0.236*** (0.000)
Performance	-0.339*** (0.000)	-0.339*** (0.000)	-0.340*** (0.000)	-0.339*** (0.000)	-0.483*** (0.000)	-0.484*** (0.000)	-0.492*** (0.000)	-0.492*** (0.000)
Lev * Financier		0.736* (0.073)		0.840 (0.190)		-0.222* (0.075)		-0.134 (0.796)
Observations	5,323	5,323	5,323	5,323	5,318	5,318	5,318	5,318
Pseudo- R^2	0.045	0.046	0.029	0.030	0.144	0.144	0.119	0.119

The positive relation between *Union* and *Asset sales* in low investor protection countries also rejects the asset tunneling hypothesis as an explanation for inferior operating performance following asset sales. With the tunneling hypothesis, there is no reason to expect a positive relation between asset diversion

Union becomes more positive for low investor protection countries. The stronger result for pure asset sales is noteworthy. Pure asset sales can be an outcome of a “successful” management–labor alliance, wherein management sells assets to avoid large-scale layoffs and retain their own jobs.

and union power. Instead, it predicts a negative relation, because workers may resist such asset reductions to protect their jobs.

Another possible explanation for our results concerning asset sales is that asset markets are less developed in low investor protection countries, making it difficult to meet cash demands without a fire sale. Fire sales, in turn, would lead to further deterioration, especially if they involve crown jewels. According to this story, as investor protection gets weaker, asset sales become more costly and will be undertaken only as a last resort, resulting in fewer asset sales. But this prediction contradicts the results reported in Tables IV, VI, and VIII (for below-median countries), all of which show more asset sales as investor protection gets weaker. Yet another possible explanation is that creditors in weaker investor protection countries are more likely to refuse rolling over debt at maturity when firms suffer poor performance, leading to more fire sales. We investigate this possibility in the robustness section and find no support for it.

Because the management–labor alliance hypothesis implies that proceeds from asset sales are used to forestall employee layoffs, we examine how asset sales in the year of distress affect layoffs in the year following distress, separately for strong and weak investor protection countries. The results in Table IX are revealing. Although asset sales lead to a significantly higher likelihood of layoffs in strong investor protection countries, no such relation is observed in weak investor protection countries, from which we infer that proceeds from asset sales are used to avoid large-scale layoffs. The interaction term between *Asset Sales* and *Union* reinforces this inference. In strong investor protection countries, strong union power helps reduce the incidence of large-scale layoffs stemming from major asset sales. By contrast, in weak investor protection countries union power shows no such effect, apparently because asset sales are done to minimize layoffs with workers' sanction.

Finally, the alliance hypothesis predicts that in low investor protection countries management turnover is less likely with strong union laws. Thus, we again split the sample by the median investor protection and relate *Union* to management turnover. The results reported in Table X are consistent with the prediction: The likelihood of management turnover decreases with strong union power only in low investor protection countries.²⁶ In these countries, a poorly performing firm in a bottom-quartile country in *Union* has a 12.33% chance of replacing management, but an otherwise similar firm in a top-quartile *Union* country has only an 8.07% chance of changing its management.

An alternative interpretation is that strong labor union laws make it easier for managers to avoid dismissal by blaming unions for poor performance. Unions have a reputation for refusing to adapt to new technologies reducing labor costs. Thus, a potential buyer is likely to demand a large discount to deal with uncooperative unions, forcing poorly performing firms

²⁶ We also reestimate the same regression for the total sample with an additional interaction term between *Union* and an indicator variable for above-median investor protection. The coefficient on the interaction term is positive and significant, and the rest of the coefficients are qualitatively similar.

Table IX
Differential Effects of Asset Sales on the Likelihood of Layoffs
by Investor and Labor Protection

This table reports the results of country random effects logit regressions using *Employee Layoffs* in year $t + 1$ as the dependent variable for firms located in countries above and below the median of *Financier*. Specifically:

$$\begin{aligned} \Pr(\text{Layoffs}_{ikt(t+1)} = 1) = & F(\alpha + \beta_1 \text{ASales}_{ikt} + \beta_2 \text{Financier}_k + \beta_3 \text{Union}_k \\ & + \beta_4 \text{ASales}_{ikt} * \text{Union}_k + \beta_5 \text{Lev}_{ik} + \beta_6 \text{Own}_{ik} + \beta_7 \text{Lev}_{ik} * \text{Financier}_k \\ & + \beta_8 \text{Lev}_{ik} * \text{Union}_k + \sum_{j=9}^{10} \beta_j X_{ikj} + \varepsilon_{ik}) \end{aligned}$$

$\text{Layoffs}_{ikt(t+1)}$ is *Employee Layoffs* at time $t + 1$, and ASales_{ikt} are *Asset Sales* at time t . $F(\cdot)$ is the logit specification. The vector of control variables X_{ikj} includes *Performance* and *Size*. Columns 1–3 estimate the model for the subsample of firms located in countries with above the median financier protection, while columns 4–6 estimate the model for the subsample of firms located in countries with below the median financier protection. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects at the two-digit level, and country random effects. The 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)
Asset sales	1.707*** (0.000)	1.706*** (0.000)	1.699*** (0.000)	0.648 (0.229)	0.660 (0.219)	0.643 (0.229)
Financier	0.262** (0.050)	0.028** (0.035)	0.288 (0.117)	0.921*** (0.008)	1.848*** (0.000)	0.916*** (0.009)
Union	-1.004* (0.076)	-1.027* (0.070)	-1.807** (0.016)	0.700 (0.267)	0.745 (0.237)	-0.275 (0.731)
Asset sales * Union	-1.612* (0.063)	-1.633* (0.059)	-1.604* (0.062)	-1.276 (0.212)	-1.277 (0.209)	-1.270 (0.211)
Leverage	1.216*** (0.000)	4.758** (0.012)	0.117 (0.872)	-0.032 (0.928)	7.700*** (0.004)	2.265* (0.066)
Own	0.315** (0.025)	0.228 (0.143)	0.209 (0.177)	0.331** (0.042)	0.216 (0.213)	0.182 (0.221)
Size	-0.005 (0.837)	-0.006 (0.803)	-0.007 (0.785)	-0.090*** (0.002)	-0.089*** (0.002)	-0.091*** (0.002)
Performance	-0.347*** (0.000)	-0.348*** (0.000)	-0.350*** (0.000)	-0.448*** (0.000)	-0.436*** (0.000)	-0.443*** (0.000)
Lev * Financier		1.166 (0.158)			0.657 (0.114)	
Lev * Union			2.682* (0.087)			4.250* (0.058)
Observations	3,897	3,897	3,897	3,550	3,550	3,550
Pseudo- R^2	0.059	0.061	0.060	0.034	0.039	0.036

to sell the corporate crown jewels. This may explain the low management turnover when labor unions are strong and the inferior performance following asset sales. However, this story also predicts that firms with stronger unions are less likely to sell assets because of the greater discount demanded by buyers. But this prediction is contrary to the positive relation

Table X
Joint Effects of Investor and Labor Protection on the Likelihood of Management Turnover

This table reports the results of country random effects logit regressions using *Management Turnover* as the dependent variable for firms located in countries above and below the median of *Financier* protection. Specifically:

$$\Pr(\textit{Turnover}_{ik} = 1) = F(\alpha + \beta_1 \textit{Financier}_k + \beta_2 \textit{Union}_k + \beta_3 \textit{Lev}_{ik} + \beta_4 \textit{Own}_{ik} + \beta_5 \textit{Lev}_{ik} * \textit{Financier}_k + \sum_{j=6}^7 \beta_j X_{ikj} + \varepsilon_{ik})$$

Turnover_{ik} is *Management Turnover* for firm *i* in country *k*. *F*(.) is the logit specification. The vector of control variables *X_{ikj}* includes *Performance* and *Size*. Columns 1–2 estimate the model for the subsample of firms located in countries with above the median of *financier*, while columns 3–4 estimate the model for the subsample of firms located in countries with below the median of *financier*. All specifications are estimated with robust standard errors clustered by country and include year fixed effects, industry fixed effects at the two-digit level, and country random effects. The *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)
Financier	0.072* (0.057)	0.216** (0.035)	0.209** (0.046)	0.394* (0.059)
Union	−0.696 (0.173)	−0.711 (0.163)	−0.589** (0.042)	−0.599** (0.039)
Leverage	0.121* (0.093)	2.092 (0.279)	0.226* (0.060)	1.856 (0.409)
Own	0.183** (0.033)	0.215 (0.472)	0.189* (0.129)	0.228* (0.091)
Size	0.017 (0.496)	0.017 (0.495)	0.043** (0.027)	0.044** (0.026)
Performance	−0.070* (0.054)	−0.071* (0.051)	−0.052* (0.0743)	−0.051 (0.439)
Lev * Financier		0.651 (0.304)		0.775* (0.061)
Observations	3,607	3,607	3,646	3,646
Pseudo- <i>R</i> ²	0.028	0.029	0.041	0.042

between the strength of union laws and the likelihood of asset sales in weak investor protection countries shown in Table VIII (and Table IV).

In sum, our various regression estimates provide sufficient evidence in support of the management–labor alliance to conclude that strong union laws, together with weak investor protection, induce underperforming managers to resort to value-reducing asset sales to minimize worker layoffs. This, in turn, garners worker support to help incumbent managers retain their jobs.

C. Robustness

We conduct numerous additional tests to examine whether our results are robust to different model specifications, alternative explanations, sample

selection criteria, and variable definitions. For brevity, we describe the results without reporting regression estimates.

Although we control for country random effects, we are concerned with omitted variables that affect both the legal protection of labor and investors and the likelihood of corporate restructuring. A possible candidate for concern is the business cycle, which may jointly affect the probability of restructuring and the legal protection of investors. For example, the *Law and Order* index, a component of *Financier*, may be reduced during recessions, when the frequency of asset sales also may increase. Although we control for macroeconomic factors by including year 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.

It is possible that our results concerning asset sales and layoffs are due to systematic predistress differences across countries. For example, companies may invest more (less) and employ more (less) workers in countries with strong investor (labor) protection during normal times (i.e., in the base year), leading to a positive (negative) spurious relation between investor (labor) protection and asset sales or layoffs during the distress year. To check this possibility, we estimate country random effects regressions relating NPPE scaled by sales in the base year and the number of employees scaled by sales in the base year to *Financier*, *Emp_Cont*, and *Union*, with industry and year fixed effects. We find no significant relations for any of the legal variables.

We also check whether our results on *Asset sales* are affected by asset liquidations to pay off debt. Creditors may refuse to roll over poorly performing firms' debt at maturity, forcing asset liquidations. We do not find a significant correlation between changes in NPPE and changes in short-term or total debt. However, there are small but significant correlations between *Asset sales* and debt changes.²⁷ Thus, we reestimate the regression models for *Asset sales* while replacing leverage with the change in short-term or total debt (not reported). The coefficients on the changes in both short-term and total debt are not significant for all specifications, while all other coefficients are very similar both in magnitude and significance to those reported in Table VIII.

Financial crises in Mexico, Thailand, Malaysia, Philippines, Indonesia, Korea, Brazil, and Argentina during our sample period may also affect our results. However, our sample includes only 57 observations from these countries during the year of the crisis and the following year because two-thirds of our observations are after 2000. Removing the 57 observations from analyses does not change our results.

To allow for the possibility that asset sales, layoffs, and turnover are jointly determined as a function of investor and labor protection, we estimate a

²⁷ Asset sales are correlated with changes in short term debt (correlation coefficients of -0.03 and -0.08 for high and low creditor protection countries, respectively) and with changes in total debt for low creditor protection countries (correlation coefficient of -0.08).

seemingly unrelated regression model with linear probability specification. The results (unreported) are qualitatively similar.

We also use alternative proxies for some of our legal variables. For union power, we use the percentage of total workforce affiliated with labor unions provided by the International Labor Organization (2005) instead of *Union*. Further, we replace *Law and Order* with the judicial efficiency measure from Djankov et al. (2003). The results remain similar with both changes.

As an alternative measure of ownership concentration, we use the sum of the 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. Our results do not change with these alternative definitions. 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.

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 greater than 50% in the distress year. To ensure that the base year performance is not a single-year phenomenon, we require that operating performance be above the industry median for two consecutive years prior to the distress year. We also use 40% and 30% cutoff points for the drop in EBITDA. Our main results are robust to these changes in sample selection criteria.

The definition of leverage and how it triggers debt covenant violations varies across countries. For example, short-term debt in one country may be regarded as long-term debt in another. Thus, we use other measures of leverage such as long-term debt to equity and long-term debt to total assets. 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. Finally, to control for possible serial correlation owing to some firms entering the sample twice, we repeat our analysis with only the first time they become distressed. The results remain unchanged.

IV. Conclusion

We find that legal protection of labor and investors has pervasive effects on restructuring decisions, and some results are surprising. Contrary to the conventional wisdom that asset restructuring by poorly performing firms is value-enhancing, major asset sales in weak investor protection countries are followed by inferior performance. These value-reducing asset sales are more prevalent when union laws are stronger. Furthermore, poorly performing managers are more likely to retain their jobs when strong union laws are combined with weak investor protection. These findings point toward alliances formed between poorly performing managers and workers, who directly and indirectly

protect top managers. Managers, in turn, refrain from worker layoffs and wage cuts by selling assets even when such sales hurt subsequent operating performance.

The general theme emerging from our study is that laws matter in determining the relative influence of different stakeholders on the corporate decision-making process. More important, our study demonstrates that investor protection and labor laws cannot be studied in isolation, because they are too closely intertwined in determining how firms respond to the competing incentives of investors, labor, and management.

Our results also illustrate that strong labor laws have unintended and undesirable consequences. Highly protective employment contract laws exacerbate workers' plight by inducing more major asset sales during corporate distress. Strong union laws help underperforming managers avoid dismissal through worker-management alliances.

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

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