

COLLECTIVE BARGAINING AND TAKEOVER ACTIVITY AROUND THE WORLD

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Abstract

Our results highlight the importance of collective bargaining on the pattern of takeover activity in 46 countries from the early 1990s. We find that the frequency and volume of takeovers within industries increase in countries with powerful labor unions and high coverage of bargaining coordination. Economically, collective bargaining largely offsets the negative effect of tighter employment protection legislations on takeovers documented in prior works. Further analyses show that collective bargaining encourages takeover activity by allowing acquirers to extract higher rents held by employees but also by facilitating the pre-completion phase of deals. Our results provide new insights into the real effects of collective bargaining in the context of takeovers around the world.

JEL Classification Codes: G30, G34, J51, K31

Keywords: collective bargaining, employment protection legislations, labor unions, mergers and acquisitions, deal completion process, offer premium

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1. Introduction

Recent debate about the role of rank-and-file employees in the context of mergers and acquisitions (M&A) has highlighted the fact that the degree to which *laws* protect employees impacts on deal occurrence and performance (Alimov, 2015; John, Knyazeva and Knyazeva, 2015; Levine, Lin and Shen, 2015; Dessaint, Golubov and Volpin, 2016). Within OECD countries, Dessaint et al. (2016) show that tighter employment protection legislations hinder workforce restructuring and the associated synergy gains, resulting in less active takeover markets. However, this debate is rather silent on collective bargaining, whereas employment protection is largely achieved through this key and more flexible institutional feature (Cazes, Khatiwada and Malo, 2012).¹ This study asks whether and how collective bargaining impacts on M&A activity at the industry level around the world. Collective bargaining entails a process of joint decision making in which employment-related issues between employees and employer (or a group of employers) are negotiated. Collective bargaining thus captures the *actual* bargaining power of employees over the firm, contrasting with employment protection legislations which give employees *de jure* bargaining power.

In this paper we report a set of novel empirical regularities that counter standard theoretical intuition in the analysis of the role of rank-and-file employees following transfers of ownership and contributes to its understanding by focusing on the differential effect played by collective bargaining *and* employment protection legislations in shaping takeover markets across the globe. The results presented here confirm the findings of prior works by showing a direct and negative effect of employment protection legislations on takeover activity. However, we show that this result only depicts a partial picture. We also find a strong direct and positive effect of collective bargaining on takeover activity. Economically, the latter result further reveals that collective

¹ The labor economics literature highlights the fact that looking at employment protection legislations in isolation can be misleading and should be examined together with other labor market institutions (Bertola, Boeri and Cazes, 2000). In fact, countries may embrace strict employment protection legislation reforms as a try to achieve at least moderate actual employment protection. This distinction is not purely hypothetical. Figure 1 illustrates that the strictness of employment protection legislations is hardly correlated with collective bargaining. This may indicate that collective bargaining exerts a complementary role to employment legislations by adapting the level of protection to the economic constraints while ensuring that the provision of legislation in place is met. In other words, when firms face industry shocks, collective bargaining adapts more easily to meet firms demand for flexibility in terms of employment protection. These considerations have direct and practical implications for deal outcome and performance and unveil that identifying the economic effects of collective bargaining is crucial to better comprehend the labor channel in the M&A literature.

bargaining considerably mitigates the negative effect of tightened employment protection legislations. The main explanation of the effect exerted by collective bargaining is intuitive: new employers (i.e., acquirers) achieve relatively greater gains in countries with high prevalence of collective bargaining by recouping larger rents—from above market wages and redundant employment—held by target employees, spurring in turn aggregate takeover activity. In what follows, we refer to this explanation as the “cost-cutting channel”.

This study proceeds by focusing on the two most salient features of countries’ collective bargaining system—namely, union density and bargaining coverage—and examine their impact on the frequency and volume of M&A around the world. Using comprehensive industry-level data from 46 countries over the period 1992 to 2010, we exploit intertemporal variations in collective bargaining across countries to isolate the industry effects of M&A activity that are caused by union density and bargaining coverage, respectively. Union density captures the strength of labor unions, while bargaining coverage goes some way in capturing the importance of collective agreements as opposed to individual contracts. We consider both features as they do not tell us alone the whole story. As Visser (2003, p. 367) explains: “union density is closer to measuring potential union bargaining pressure, ... [whereas] bargaining coverage [is] closer to measuring the effectiveness of unions in providing and defending minimum standards of income and employment protection in labor markets.”²

The empirical analysis shows that collective bargaining increases the frequency and volume of M&A at the industry level. The size of the effect is substantial. A one standard deviation increase in union density (resp. bargaining coverage) leads to a 7.2% (resp. 10.7%) increase in the frequency of M&A within industries. Similarly, a one standard deviation increase in union density (resp. bargaining coverage) increases the volume of M&A by 1.7% (resp. 2.6%). In addition to industry-country and industry-year fixed effects, we contemporaneously control for industry levels of competition, leverage, growth prospects and profitability as well as countries’ macroeconomic and institutional environment—variables that have been shown to affect M&A activity. In other words, we directly control for industry effects of M&A activity that come through changes in industry-country-level and country-level variables that are brought about by union density and bargaining coverage. Thus, the effect of collective bargaining on the pattern of M&A activity that

² See also Flanagan (1999) and OECD (2004) in the labor economics literature.

we document is independent of the other determinants of M&A activity.³ Moreover, we assess the combined effect of collective bargaining and employment protection legislations. We find that the positive effects of collective bargaining still hold after controlling for employment protection legislations and, economically, outweigh the adverse effects produced by employment protection legislations on takeover activity. We also report some evidence of a more pronounced effect of union density in countries with stricter employment protection legislations.

Next, we report evidence supporting the cost-cutting channel as the main explanation of our findings. First, we explore cross-sectional heterogeneity of the relationship. Consistent with the view that a reason of firms' attractiveness is linked to the operational gains from active cost-cutting (including layoffs) after takeovers, we find that the positive effect of collective bargaining on M&A activity is stronger in labor-intensive industries. Second, we further gauge this cost-cutting channel by estimating the *magnitude* and *direction* of wealth transfers from employees to shareholders in target firms. Shleifer and Summers (1988) argue that a large part of the takeover premium comes from rent expropriation from employees. Collective bargaining is generally viewed as a rent-seeking institution that successfully captures quasi-rents, such as higher wage premiums and staffing levels, which could have otherwise flowed to shareholders in the form of higher profits. We show that greater collective bargaining leads to higher takeover premiums accruing to target shareholders, as proxied by target announcement returns (see Schwert, 2000). In a multivariate regressions accounting for a host of potentially correlated effects, we find that target firms in countries with high levels of collective bargaining experience higher announcement returns. As an example, target return around the announcement date increases by 51.9% to 64.2% of its unconditional average of 19.5% when a country's union density rate increases by one standard deviation. For average-sized target firms, this means an expected gain of \$96.4-119.1 million. All else equal, collective bargaining generates substantial gains for target shareholders. We find similar results when we look at offer premiums. Third, we examine the effects of collective bargaining on post-takeover workforce restructuring. We find that takeovers and mergers reduce combined firm employment, but higher collective bargaining is associated with greater reduction in the combined firm workforce. This result suggests that post-takeover reduction

³ We further mitigate omitted variable concerns by demonstrating that changes in collective bargaining systems are not due to changes in macroeconomic fundamentals and institutional arrangements that could potentially positively affect takeover markets.

in staffing levels is an important *source* of wealth transfers accruing to target shareholders, which further reinforces the cost-cutting channel interpretation of our main findings.

Furthermore, we document that our findings on takeover activity cannot be explained by the cost-cutting channel *alone*. We show that collective bargaining also enhances takeover activity by facilitating the pre-completion phase of M&A deals. The complexities of the negotiation process after the signing of an initial merger agreement can be overcome when the dialog with social partners is enhanced and led by collective bargaining. In particular, dealing with due diligence research and employment issues in a timely, coordinated and cooperative way is crucial for the outcome of takeover plans and, ultimately, for the realization of synergy gains.⁴ Collective bargaining allows mitigating the adverse effects causing tension between the acquirer and employees and also converging both parties to an amicable solution should any conflicts occur—such as exploring alternatives for employees, including reassignment, early retirement, reconversion, etc. We find that collective bargaining (as measured by union density and bargaining coverage) significantly increases the probability of deal completion and reduces deal completion duration (i.e., the length of deal negotiation, measured by the number of calendar days between the announcement date and the completion date). The size of the effect is also meaningful. A one standard deviation increase in union density (resp. bargaining coverage) implies a 7.9% (resp. 6.4%) increase in the probability of deal completion and a reduction in deal duration by 33 (resp. 20) calendar days, which is about 35% (resp. 21%) shorter than the average deal duration of 97 days in our sample. In line with our prior results on M&A activity, we also find that employment protection legislations decrease the probability of deal completion but have no significant impact on deal completion duration. All our results on the deal completion process complement the “cost-cutting” explanation of the positive relationship between collective bargaining and takeover activity.

We also explore other plausible underlying mechanisms. Specifically, we analyze how cross-sectional variation in collective bargaining alters our baseline results. First, we investigate

⁴ See Kamakura (2006) and the many examples cited therein. Kamakura (2006) thoroughly analyzes M&A activity in the chemical industry and demonstrates that social dialog and collective bargaining are of special significance, especially in Europe, for chemical firms, which are under constant pressure to adapt to changing industry structure (i.e., by expanding inorganically or restructuring). Kamakura (2006, p. 93) uncovers that: “Social partners in the chemical industry believe that collective bargaining is the best tool to systematically and effectively cope with any changes because collective bargaining agreements are the panacea for deciding all labour matters in a transparent way, as well as providing the parties with the necessary flexibility in solving problems related to restructuring.”

innovation-intensive industries. Better protecting employees can be seen as a way to incentivize them to increase their investment in skills and to take more successful and innovative pursuits (Acharya, Baghai and Subramanian, 2013, 2014). Therefore, countries with high levels of collective bargaining could constitute a comparative advantage for acquirers in innovation-intensive industries. However, our tests on M&A activity within these industries rule out the possibility of this innovation-based explanation. Second, we explore the potential differential effect of collective bargaining over business cycle fluctuations. We show a more pronounced effect of collective bargaining in recession periods, suggesting that in the absence of revenue enhancement opportunities in such periods, acquirers choose targets with high potential of cost-cutting (i.e., when collective bargaining is high).

Finally, our results are robust to further checks. We gauge the sensitivity of our results to various subsamples to verify whether our findings are not confined to subsets of particular takeover markets such as in the UK and US, in Scandinavian countries, in non-OECD countries, or in heavily regulated industries. Then we use other data sources for our indicators of collective bargaining. We also verify the sensitivity of our results to sample selection issues by imposing different criteria to select and weigh the M&A deals included in our analyses. We do not find any evidence that changes our prior conclusions.

This paper contributes to the empirical literature on labor and takeovers. Early works study employment outcomes following takeovers. From hostile takeovers taking place in the 1980s, Bhagat, Shleifer and Vishny (1990) find that layoffs explain 10-20% of the average takeover premium. Brown and Medoff (1988) and Kaplan (1989) find consistent results in other contexts. Among the more recent works, Li (2013) studies productivity changes after takeovers and finds that target plants undergo significant job destruction, among other operating cost reductions. Davis, Haltiwanger, Handley, Jarmin, Lerner and Miranda (2014) document that private equity buyouts lead to greater job loss at establishments operated by target firms. Ouimet and Zarutskie (2016) show that some firms pursue M&A in order to efficiently increase the workforce. Other works move one step further to investigate the role of labor unions in takeovers. These works rely on the US setting and include Rosett (1990), Becker (1995), and Li (2012). Rosett (1990) and Becker (1995) show that takeovers result in the redistribution of rents held by unionized labor to shareholders. Li (2012) analyzes the role of labor unions in protecting workers' interests in

takeovers. He finds that targets in more unionized industries experience worse wage and employment outcomes after takeovers.

Recent studies focus on employment protection legislations and M&A activity. Empirical evidence is quite mixed. John et al. (2015) find that acquirers from US states that have passed the right-to-work statutes experience lower announcement returns.⁵ However, they report that the volume of acquisition activity is not significantly different between weak labor rights and strong labor rights states. Alimov (2015) shows that countries with tighter employment regulations correlate with higher levels of cross-border merger activity. In contrast, Dessaint et al. (2016) document reductions in takeover activity and synergies after the passage of major employment legislation reforms that increase employment protection in 21 OECD countries over the period 1985-2007. In this paper, we complement their work along two important dimensions. First, we confirm that the reduced takeover activity in response to tighter employment legislations continues to hold using a sample covering a larger set of developed and developing countries. Their sample comprises about 70% of deals that took place in the UK or US. Both countries are very different from the average country in our sample of 46 countries in the 1992-2010 interval. Second, we concentrate our analysis on employment protection afforded by collective bargaining and show that the negative effect of legislations is offset by the positive effect of collective bargaining.⁶ To the best of our knowledge, this is the first comprehensive study providing worldwide evidence on the effects of collective bargaining on M&A activity and identifying the explanatory factors of its effects.

This paper also builds on the literature on cross-country determinants of M&A activity. Rossi and Volpin (2004) find that better investor protection is associated with high rate of successful M&A deals, more attempted hostile takeovers and fewer cross-border deals. They also report that takeover premiums are higher in countries with better investor protection. In an industry-level analysis, like ours, Bris, Brisley and Cabolis (2008) examine the effects of cross-border mergers that are associated with differences in investor protection. They find that the Tobin's Q of an industry is positively related to the percentage of the market capitalization in the industry that is acquired by firms coming from countries that are more protective. Bris, Cabolis

⁵ Levine et al. (2015) report similar findings on acquirer returns using a sample of cross-border deals in OECD countries.

⁶ Exploiting a discontinuity in unionization at majority voting threshold, Tian and Wang (2016) find that unionization has a negative impact on US firm's takeover exposure and merger gains.

and Janowski (2010) and Lel and Miller (2015) document that countries adopting takeover and anti-trust laws experience an increase in aggregate M&A activity. Ahern, Daminelli and Fracassi (2015) highlight the role of national culture in merger decisions around the world. Our paper adds to this literature by identifying a significant effect of collective bargaining on M&A activity within industries in a large cross-section of countries over two decades.

The rest of the paper proceeds as follows. Section 2 develops empirical predictions. Section 3 describes the data, while section 4 contains regression results. Section 5 concludes.

2. Hypotheses Development

The pursuit of synergy gains arising from operating improvements often justify takeover decisions.⁷ Devos, Kadapakkam and Krishnamurthy (2009) estimate and decompose the synergy gains from a sample of 264 large mergers and report that the larger part of synergy gains (about 80%) result from operating improvements. Assuming that acquirers will undertake takeovers that create positive net present value, they will target firms that allow the realizations of these operating synergy gains. Operating improvements largely come from adjusting employment terms and conditions, which often implies laying off redundant employees and cutting off wages. Employees as a group have thus incentives to protect themselves to cope with employment uncertainty.

Employment protection can be achieved either through legislation or collective bargaining (Cazes et al., 2012). Employment protection legislations encompass labor codes, employment protection acts, and other types of laws, while collective bargaining is the process through which employees and employer(s) actually arrive at an agreement determining both terms and conditions of employment and labor relations. There are significant linkages between the two labor market institutions and it is important to consider them together as they affect firms' strategic objectives and also employees' welfare. However, collective bargaining plays a crucial complementary role to legislations by facilitating the adaptability of firms to various economic constraints while ensuring employment protection. In other words, collective bargaining adapts easily, when firms face changing industry environment, to meet firms demand for flexibility in terms of employment protection. Collective bargaining thus captures much better the actual bargaining power of employees over the firm.

⁷ See pioneering works of Gort (1969), Jensen (1993), and Mitchell and Mulherin (1996).

Therefore, in countries with powerful labor unions and high coverage of bargaining coordination (i.e., countries with high prevalence of collective bargaining), managers are more prone to tie with employees, who are more inclined to benefit from rents of this relationship, especially when strong managerial incentives are absent. Employee rents may mostly take the form of higher wages and staffing levels.⁸ Cronqvist, Heyman, Nilsson, Svaleryd and Vlachos (2009) consistently show that entrenched managers pay their employees more. Such manager-employees agreements negatively impact on firm value and, thereby, render the firm more attractive in the eyes of potential acquirers. Indeed, a change in ownership can break these collusive agreements between managers and employees, leading to greater gains originating from rents held by target employees. The more employees have bargaining power over (incumbent) managers, the greater the gain opportunities for the new employer (i.e., the acquirer). In other words, greater employee rents, associated with tighter collective bargaining, are seen as important sources of post-takeover gains accruing to shareholders, in turn fostering takeover activity. Thus, we have the following empirical prediction: *The frequency and volume of M&A are enhanced in countries with high level of collective bargaining.*

In line with this prediction, Shleifer and Summers (1988) put forward a theory of takeovers as breaching existing contracts, either explicit or implicit, between incumbent managers and firm stakeholders.⁹ The authors argue that acquirers renege on existing contracts and expropriate rents from target firm stakeholders. Anticipating this breach of contract, target shareholders demand higher prices from acquirers, and thus the post-takeover transfers show up as (part of) the takeover premiums. The victims of such redistributions are, among firm stakeholders, mostly employees. Consistent with this idea, Rosett (1990) and Becker (1995) find wealth concessions by unions in takeovers. On the sources of these wealth transfers, Li (2012) reports relatively more wage and employment reductions after transfers of ownership in unionized US firms. We therefore predict that *takeover premiums are higher in countries with high level of collective bargaining.*

Conceptually, the discussion above applies to collective bargaining at the national level. However, collective bargaining at the industry level between individual labor unions and employer associations is a central arena for setting wage and employment conditions in some countries,

⁸ Pagano and Volpin (2005) argue that managers offer higher wage premiums in return for workers' support to avert hostile takeovers.

⁹ Garvey and Gaston (1997) later formalize this view.

which may cast some doubts on the importance of collective bargaining at the national level that we investigate. We address this possibility by including interacted industry and year fixed effects to control for industry-level dynamics. Moreover, considering the national level of collective bargaining constant, acquirers may be discouraged in their willingness to restructure the workforce after the takeover or may remain constrained in their ability to do so, altering the expected profits from of a reappropriation of employee rents in countries with high collective bargaining. We thus explore the role of collective bargaining during the negotiation process; that is, during the period elapsing after the signing of an initial merger agreement and the deal completion. In addition to takeover activity and premiums, we study whether collective bargaining benefits acquirers by facilitating the completion process. In particular, timely dialogue and prior consultations—rendered possible due to collective bargaining—are more likely to lead to successful takeovers because they enable acquirers to retain the support and cooperation of employees (see Kamakura, 2006, for a detailed discussion). Concretely, collective bargaining allows better quality exchange of information with employees when firms are acquired (i.e., by explaining and giving reasons for such changes) and it also allows better management of social plans resulting from takeovers and mergers (i.e., by exploring and offering alternatives to dismissals, such as reassignment, reconversion, training, early retirement, personalized worker support). In this respect, collective bargaining plays a central role in, e.g., negotiations, (time-constrained) due diligence research, and the resolution of employment issues. Hence, *the probability (resp. duration) of deal completion is higher (resp. lower) in countries with high level of collective bargaining.*

3. Sample, Variables Definitions and Descriptive Statistics

3.1. Sample Composition and Data Sources

Our sample of M&A deals is obtained from the Securities Data Corporation's (SDC) database for 46 countries covered by the Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts' (ICTWSS) database over the period 1992-2010. Our sample period starts in 1992 because it is the first year when the data quality in the SDC database

became reliable.¹⁰ We include all completed deals (domestic and cross-border) valued at \$1 million or more for which the target is a public firm. We exclude LBOs, spin-offs, exchange offers, recapitalization, share repurchases, tender offers and buyback transactions. We drop self-dealing transactions from our sample for which acquirer and target CUSIPS and announcement dates are identical. For each deal, we obtain information (from SDC) on announcement date, public status of target, deal value, form of deal, industry classification and other deal-related variables. The data filters yield a sample of 32,912 M&A deals with an aggregate deal value of \$13,645.35 billion across the 46 countries.

Table 1 presents the sample composition. The numbers reported are in line with prior studies, including Rossi and Volpin (2004), Erel, Liao and Weisbach (2012), Ahern et al. (2015) and Lal and Miller (2015), and thus do not warrant detailed discussion. Panel A reports the time distribution of deals. For example, we observe an increase in both the number of M&A deals and deal values over the years 1997 to 2000 and another surge in years 2007-2009. Panel B presents the distribution of deals across countries. The top three target countries undertaking large number of deals in our sample are the US (11,409), Japan (3,503) and Canada (2,779). Consistent with Rossi and Volpin (2004), Common law countries represent the bulk of M&A activity.

The data on firm/industry characteristics are obtained from Center for Research in Security Prices (CRSP) for the US and from Worldscope for the other 45 countries. We use all listed firms available in each year across all the countries. The daily security prices data are obtained from CRSP and Compustat Global databases. For country and country-pair characteristics, we collect data from various data sources. All variables definitions and sources are summarized in Table A1.

3.2. Measuring Takeover Activity and Gains

Our indicators of takeover activity measure the frequency and volume of M&A. We construct our variables at the industry level using the Fama-French (FF) definitions of 12 industry portfolio (see Fama and French, 1997). A more detailed industry classification (like the 48-FF industries) would inflate the number of zeros due to the low takeover activity in many industries

¹⁰ See Netter, Stegemoller and Wintoki (2011) for a discussion about the completeness of SDC data. The authors point out that SDC covers deals of any value, including unreported values, only after 1992 (see also the SDC online help).

of some countries. Closely following Rossi and Volpin (2004) and Bris et al. (2008), our indicators of takeover activity are defined as follows.

The frequency of M&A is calculated as the number of M&A deals per industry-country-year scaled by the number of listed firm per industry-country-year. More formally,

$$\text{Frequency of M\&A}_{jkt} = \frac{\text{Number of M\&A deals}_{jkt}}{\text{Number of listed firms}_{jkt}},$$

where j , k and t are industry, target country and year, respectively. Scaling the number of M&A deals by the number of listed firms allows us to capture the relative intensity of M&A activity *across* and *within* industries-countries.

The volume of M&A is calculated as follows:

$$\text{Volume of M\&A}_{jkt} = \frac{\text{Total dollar deal value of M\&A}_{jkt}}{\text{Total market capitalization of listed firms}_{jkt}},$$

that is, the dollar value of all M&A of firms from industry j in country k in year t divided by the total stock market capitalization of industry j in country k in year t . Information on the number of listed firms and stock market capitalization for each firm is retrieved from CRSP (for the US) and Worldscope (for the other countries).

Regarding our measurement of takeover gains for target firms, we follow Masulis, Wang and Xie's (2007) and compute the cumulative abnormal returns (CAR) of target firms relative to announcement date by market model. We calculate a 3-day CAR spreads over (-1,+1) event window in which 0 is the announcement date. The parameter of the market model is estimated by 200-day estimation period spreads over (-236,-36) days from day 0. For robustness purposes, we also calculate target CAR over 7-day and 11-day windows around the deal announcement date and also look at the offer premium. The offer premium is defined as the offer price relative to target market price four weeks prior to deal announcement.

Further analyses also consider measures of deal completion and deal completion duration, which will be presented in section 4.

3.3. Measuring Employment Protection: Collective Bargaining and Employment Protection Legislations

We measure two salient features of a country's collective bargaining system which shapes labor power over the firm (see, e.g., Flanagan, 1999; OECD 2004). The two country-level indicators used are union density and bargaining coverage. We draw our measures from the comprehensive ICTWSS database compiled by Visser (2011) at the Amsterdam Institute for Advanced Labor Studies (AIAS) of the University of Amsterdam, of which most researchers in labor economics refer to.

Union density is net union membership as a proportion of wage and salary earners in employment.¹¹ It ranges from 0 to 1. Moving from low to high shows increase in union density. Next, bargaining coverage is number of employees covered by collective (wage) bargaining agreements as a proportion of all wage and salary earners in employment with the right to bargaining. The index does not include the sectors and occupations that are excluded from the right to bargain. It ranges from 0 to 1. Moving from low to high shows increase in coverage by bargaining agreements. While union density represents one measure of potential union bargaining clout, bargaining coverage is a complementary indicator of union presence as it measures the real extent to which salaried workers are subject to union-negotiated terms and conditions of employment. For robustness purposes, we also use additional measures of union density and bargaining coverage reported by the OECD and International Labour Office (ILO).

Then, to capture the stringency of employment protection legislations against individual dismissal, we use the Employment Protection Laws (EPL) index compiled by the OECD. The EPL is a composite index covering various aspects of dismissal protection grouped into three broad categories: (1) the procedural requirements that need to be followed after the decision of firing in case of regular employment contracts; (2) the notice and severance pay requirements; (3) the difficulty of dismissal. This index ranges from 0 to 6. Higher EPL strengthens employees' *de jure* bargaining power. The use of the EPL index offers an important advantage as it is comparable across and within countries.

¹¹ This makes the best available approximation because this measure corrects for the number of retired workers, among others; see also Ebbinghaus and Visser (2000).

3.4. Other Determinants of Takeovers

Since many other factors are likely related to the patterns of collective bargaining, we control for a host of industry-country-level factors and country-level characteristics in our industry-level analyses. For our deal-level analyses we further control for other deal-level, firm-level and country-pair characteristics. All control variables employed have been shown by existing research to be associated with M&A activity and gains (e.g., Rossi and Volpin, 2004; Billet and Xue, 2007; Masulis et al., 2007; Bris et al., 2008; Erel et al., 2012; Ahern et al., 2015; Lel and Miller, 2015). All the variables used in the analyses are further detailed in Table A1.

First, in our deal-level analyses we include deal size, relative size and target market capitalization variables as well as cash payment, financial acquirer, toehold, friendly deal and same industry dummy variables. Second, we control for firm-level characteristics: total assets, leverage, market-to-book ratio, ROA, dividend per share and competition structure of the industry. Third, we convert all firm-level variables at industry-level by taking the industry median of each variable.¹² The inclusion of these variables isolates the impact of collective bargaining on M&A activity/gains from the effect of deal, firm and industry characteristics. Fourth, we account for various country-level and country-pair characteristics. To capture a country's size and level of economic development, we use GDP and GDP per capita. We also control for recession periods. We add both stock market capitalization and private credit ratios to capture a country's level of financial development. Trade openness is the sum of imports and exports as a share of GDP. We proxy for a country's institutional environment by including time-varying indices taken from the International Country Risk Guide's (ICRG) database and capturing the quality of institutions, state of investment environment and democratic accountability. As exchange rate differences between acquirer and target countries affect M&A gains, we calculate the exchange rate volatility between acquirer and target countries from 36 months up to 1 month relative to the announcement date. Last, we include cross-border and same legal origin dummy variables.

¹² The industry-level analysis also accounts for labor intensity.

3.5. Descriptive Statistics

The descriptive statistics are displayed in Table 2. We only comment on descriptive statistics of employment protection variables. The descriptive statistics of the other variables do not warrant further discussions as they are consistent with existing studies. Concerning union density, Table 2 reports a mean value of 0.300 and a standard deviation equal to 0.191. Although Table 1 Panel B also clearly indicates that union density varies substantially over time (mean and standard deviation for each country are reported), this hides a lot of the information. A closer look at our sample shows the following (untabulated) patterns: Some countries have experienced significant reduction in union density over our sample period. For example, union density rate in Australia, the Netherlands and the UK drops, respectively, by 52.2%, 23.4%, 32.0% between 1992 and 2010. This contrasts with other countries, like Finland, Iceland and Sweden, where union density shows several periods of increase over the same period. Cross-country variation is also substantial (see Table 1 Panel B). For example, France, Spain and the US have very low union density rates (lower than 20%). The Scandinavian countries have very high rates (all above 50%, some around 80%). The pattern is not necessarily similar for bargaining coverage. Table 2 reports a mean value of 0.557 and a standard deviation equal to 0.284. Bargaining coverage is on average much higher than union density and much more stable over the period. While high union density leads to high coverage of bargaining agreements, the converse is not true. As an example, France and Spain have very low union density, yet bargaining coverage is above 80%.¹³ Note also that the correlation (untabulated) between union density and bargaining coverage is 0.572. As discussed at the outset, employment protection legislations do not necessarily correlate with collective bargaining.¹⁴ Figure 1 plots union density (resp. bargaining coverage) with employment protection legislations and reveals basically no correlation between the two labor market institutions when considering a global sample. These (absence of) correlations in Figure 1 highlight interesting heterogeneity. Countries in the lower left-hand corner, including Canada and the US, have low union density (resp. bargaining coverage) combined with the package of laws the least protective of employees. This contrasts with other countries in the upper right-hand corner, including

¹³ The bulk of the variance between union density and bargaining coverage is explained by mandatory extensions of collective agreements to non-unionized sectors as well as the share of employers belonging to employer associations that negotiate collective contracts (see OECD, 2014, for further details).

¹⁴ See also Table 1 Panel B for mean and standard deviation of EPL index in each country.

Belgium, Italy, and Scandinavian countries, while many countries lie in between. In the case of developing and emerging economies, tighter employment protection legislations are rather associated with low bargaining coverage—e.g., in the lower right-hand corner are Indonesia and Mexico.

Overall, these descriptive statistics indicate that employment protection across and within countries is the result of various combinations of employment protection legislations and collective bargaining, with potentially different role on M&A markets as Figure 2 suggests. Indeed, Figure 2 exhibits a positive (resp. negative) association between our indicators of collective bargaining (resp. EPL index) and the average volume of M&A. The regression analyses to follow aim at identifying and explaining these different patterns.

4. Regression Results

4.1. Collective Bargaining and Takeover Activity

We begin our analysis by examining the effect of collective bargaining on the frequency and volume of M&A. Using industry-level data, we estimate the following specification:

$$y_{jkt} = \alpha_j + \alpha_k + \alpha_t + \beta \cdot Labor_{kt} + \gamma \cdot X_{jkt} + \varepsilon_{jkt}, \quad (1)$$

where j denotes an industry, k a country and t a year. The dependent variable, y_{jkt} , is either the frequency of M&A or volume of M&A. α_j , α_k and α_t are industry, country, and year fixed effects, respectively. $Labor_{kt}$ is one of the two measures of collective bargaining (i.e., union density and bargaining coverage). X_{jkt} is a vector of control variables and ε_{jkt} the error term. The vector of control variables takes into account industry-country-level factors (total assets, leverage, market-to-book ratio, ROA, dividend per share, labor intensity, and competition) as well as country-level characteristics (GDP, GDP per capita, recession, stock market capitalization, private credit, trade openness, institutional quality, investment profile, and democratic accountability). In all cases, standard errors are adjusted for heteroskedasticity and clustered in two ways, by industry-country and by year since we are collapsing the data at these levels.

Although we saturate our specifications with dense sets of fixed effects, an important potential endogeneity concern is that of omitted variables, whereby changes in collective bargaining system are systematically preceded by macroeconomic and institutional changes that

could potentially have a positive effect on takeover activity. We attempt to alleviate this concern by examining the dynamics of various institutional and macroeconomic factors in the year preceding changes in union density and bargaining coverage, respectively. Specifically, we regress changes in our two indicators of collective bargaining on the lagged value of change in various macroeconomic and institutional factors such as economic growth and development, financial development, unemployment, investment, quality of institutions, democratic accountability, and employment legislations. The results reported in Table A2 in the Appendix indicate that none of the prior dynamics in these macroeconomic and institutional factors drive changes in either union density or bargaining coverage.

Tables 3 and 4 report the coefficients of OLS regression models derived from specification (1).¹⁵ Table 3 focuses on the frequency of M&A, while Table 4 repeats the analysis with the volume of M&A. In column (1) of Table 3, we do not include any control variables, but the fixed effects. The coefficient of interest (β in specification (1) above) is positive and significant at the 1% level. In column (2), we add to the previous specification industry-country-level and country-level control variables. The results are unchanged: β is positive and significant at the 1% level. In column (3), besides controlling for the all usual determinants of the frequency of M&A, we have industry-year fixed effects ($\alpha_j \times \alpha_t$) to account for industry-level dynamics and country fixed effects to account for time-invariant country-specific characteristics. In column (4), we estimate the same specification as in column (3) but we replace country fixed effects by industry-country fixed effects ($\alpha_j \times \alpha_k$), which allow for differences across countries within the same industry.

Across columns (1)-(4), the coefficient of union density is positive, always statistically significant at the 1% level, and has a similar magnitude. These positive effects have large economic consequences. For the average industry, a one standard deviation increase in countries' union density leads to an increase of 7.2% in the frequency of M&A (using results from column (4), i.e., 0.191×0.376). Our specifications contain a large number of control variables, capturing effects that are known to influence M&A activity, for which estimated coefficients show the expected sign in most regression models.

¹⁵ We estimate all specifications using linear models as the large number of fixed effects introduced could affect the estimates in Tobit regression models (see Greene, 2004). For robustness purposes, we re-estimate all specifications using Tobit regression models to account for the truncation of observed M&A activity at zero. Table A3 in Appendix displays the results, which are similar.

In columns (5)-(8), we mirror the specifications in columns (1)-(4) for bargaining coverage as an independent variable of interest. The results are in line with those presented so far. Throughout our specifications, increases in bargaining coverage at the country level are associated with increases in the frequency of M&A at the industry level. The economic effect is sizable. Using the results of column (8), the frequency of M&A of an industry increases by 10.7% as bargaining coverage increases by a one standard deviation (i.e., 0.284×0.375).

Turning to the volume of M&A, columns (1)-(4) of Table 4 report the coefficients on union density, while columns (5)-(8) report the coefficients on bargaining coverage. We find that the coefficients, either on union density or bargaining coverage, are positive and statistically significant at the 5% level in seven out of eight specifications. The magnitude of the effects is also economically meaningful. Using the results of column (4) (resp. (8)), the volume of M&A increases by 1.7% (resp. 2.6%) in response to an increase of union density (resp. bargaining coverage) by one standard deviation (i.e., 0.191×0.090 and 0.284×0.092 , respectively).¹⁶

Collectively, these results strongly characterize collective bargaining as being a key driver of M&A activity at the industry level in developed economies. We now turn to address the role of employment protection legislations.

4.2. Assessing the Role of Employment Protection Legislations

As the national level of employment protection results from various combinations of collective bargaining and employment protection legislations, it is important to examine their respective role and interaction on takeover activity. To capture the stringency of employment protection legislations, we use the EPL index. The EPL index captures, by design, discrete changes in employment protection legislations. We display our results in Table 5. The dependent variable

¹⁶ It is also worthwhile emphasizing that all the results on M&A activity presented here are obtained using as dependent variable, either the frequency of M&A or the volume of M&A, which are respectively scaled by the number of all listed firms per industry-year in a target country and the stock market capitalization of all listed firms in an industry-country-year. The advantage of such scaling is that it allows industry comparisons across and within countries. However, such scaling may disproportionately weight countries with relatively small M&A markets, in turn affecting statistical inference. Table A3 in the Appendix shows similar results when we employ unscaled dependent variables; that is, the logarithm of the number of deals by industry-country and the logarithm of the dollar volume of deals by industry-country. These results are also robust to the time period. The results, unreported, are qualitatively the same if we restrict our sample to the 1990s, the 2000s, or even the pre-2008 crisis period. The global financial crisis is, indeed, a severe structural shock for both collective bargaining systems and takeover markets.

in all regressions is the frequency of M&A.¹⁷ Odd-numbered columns take a specification similar to (1) with the further addition of EPL to test the relative importance of each labor market institution. Even-numbered columns condition the effect of collective bargaining on the frequency of M&A on EPL; in this way, we test the extent to which collective bargaining complements or substitutes employment protection legislations.

In column (1), the coefficient obtained on EPL appears negative and significant at the 10% level, supporting and extending evidence from other studies (e.g., Dessaint et al., 2016). Controlling for EPL does not reduce the explanatory power of union density on the frequency of M&A. In column (2), we augment the previous specification with the interaction term. Union density continues to play a direct and positive effect on takeover activity at the industry level around the world, contrasting again with a direct and negative effect for EPL. Comparing coefficient sizes obtained indicates that union density produces a larger impact on the frequency of M&A than EPL and also suggests that collective bargaining fully offsets the effect of legal protections. Also from column (2), the interaction term (*Union Density* \times *EPL*) appears positive and significant and its estimate is greater than the estimate on union density itself. This implies that the effect of union density is reinforced in countries with tighter laws protecting employees. Columns (3) and (4) repeat these tests with bargaining coverage. It confirms the conclusions drawn for union density and EPL, except that the interaction term turns out to be insignificant. Overall, these findings show that both labor market institutions produce opposite effects, with collective bargaining mitigating to a large extent the effect of employment legislations.

4.3. Sensitivity Tests

Table 6 presents a number of sensitivity tests on the frequency of M&A.¹⁸ Panel A reports the estimates from a country-level analysis. Columns (1) and (2) report the coefficients on union density, while columns (3) and (4) show the coefficients on bargaining coverage.¹⁹ Across the specifications we can see that collective bargaining is positively associated with the frequency of

¹⁷ The results are robust to employing volume of M&A as dependent variable.

¹⁸ Unreported results, available upon request, show that the results of this section are robust to employing volume of M&A as dependent variable.

¹⁹ For this test, we cluster standard errors at the dimensions of the panel, which in this case amounts to double clustering by country and year.

M&A aggregated at the country level. The coefficients on union density and bargaining coverage are positive and always significant at conventional levels. In terms of economic size, the estimate in column (2) suggests that when a country experiences an increase of its union density rate by one standard deviation the frequency of countrywide M&A activity increases by 7.9% (i.e., 0.191×0.414). For bargaining coverage, a one standard deviation increase implies a 12.5% increase in the frequency of M&A at the country level (using the estimate in column (4), i.e., 0.284×0.439).

We also conduct a variety of other analyses to determine whether the patterns (at the industry level) we document are robust. Our regression specifications thus far considered union density and bargaining coverage separately to avoid multicollinearity problems arising from the strong correlations between the two variables. In Panel B column (1), we include in the same specification union density and bargaining coverage. This yields similar results with coefficients on both measures of collective bargaining still positive and significant. Then, we test the sensitivity of our results to the use of other measures of union density and collective bargaining retrieved from different sources. In column (2) we use the OECD measure of union density, while in columns (3) and (4) we use the ILO measures of union density and bargaining coverage, respectively. Our results are robust to the use of alternative data sources.

Further analyses include: dropping UK and US (Panel C columns (1) and (6)); dropping Scandinavian countries (Panel C columns (2) and (7)); splitting the sample between OECD and non-OECD countries (Panel C columns (3), (4), (8) and (9)); and excluding targets in financial services industry (Panel C columns (5) and (10)). In all cases, the results are very similar to those shown in Table 4.

Lastly, our results continue to hold when we impose different sample selection criteria to compute our dependent variables. These alternative sample selection criteria are the following: selecting only transfers of stakes above 10% (Panel D columns (1) and (5)); focusing on deals that represents an explicit change of control, meaning that the acquirer purchases 50% or more of the target's shares in the deal and owns less than 50% of the target prior to the deal (Panel D columns (2) and (6)); limiting only to transfers of stakes of 100% (Panel D columns (3) and (7)); and expanding the selection to failed deals (Panel D columns (4) and (8)).

4.4. Identifying the Economic Channel

4.4.1. Collective Bargaining in Labor-Intensive Industries

Our evidence is consistent with the prediction that collective bargaining spurs M&A activity. In this section, we analyze underlying mechanisms through which this occurs. In section 2, we argue that greater gains can be sourced from cost-cutting in countries with high prevalence of collective bargaining. If our results are attributable to this channel, we should expect to observe a greater positive association in labor-intensive industries, that is, industries in which labor is a more important input of production. To test this conjecture, we estimate

$$y_{jkt} = \alpha_j + \alpha_k + \alpha_t + \beta_1 \cdot Labor_{kt} + \beta_2 \cdot I_{jkt} + \beta_3 \cdot (Labor_{kt} \times I_{jkt}) + \gamma \cdot X_{jkt} + \varepsilon_{jkt}. \quad (2)$$

Here I_{jkt} is a measure of labor intensity for industry j in year t for a country k , while β_3 is the coefficient of interest. (See Table A1 for variables definitions.) All the other variables and subscripts are defined as before. Standard errors are double-clustered by industry-country and year.

Table 7 presents the results for labor intensity, in which the dependent variable is the frequency of M&A. For the sake of exposition, we do not report the results for which the volume of M&A is the dependent variable since they are similar. We proxy labor intensity with the industry median of the number of employees (columns (1)-(4)) and with the industry median of the ratio of staff costs to sales (columns (5)-(8)). In column (1), besides the usual determinants of M&A activity, we control for industry, country and year fixed effects. In this specification we see that union density is positively associated with the frequency of M&A only to the extent that target firms operate in labor-intensive industries. In fact, the direct effect of union density (β_1 in specification (2)) is positive but insignificant, while the interaction between union density and labor intensity (β_3) is positive and significant. In column (2), we estimate specification (2) by including country-year fixed effects and industry-year fixed effects to further control for industry dynamics. The coefficient β_3 on the interaction remains positive and significant. In specifications in columns (3) and (4) we interact labor intensity with bargaining coverage using respectively the same combinations of fixed effects. In these specifications we also see that bargaining coverage is positively associated with the frequency of M&A only in labor-intensive industries. The estimate of β_3 is again positive and significant in columns (5)-(8), in which we estimate the same specifications as in columns (1)-(4) with the industry median of the ratio of staff costs to sales as

an alternative proxy for labor intensity. These results indicate that the incidence of M&A increases significantly more in industries in which there are more opportunities to restructure the labor force. This analysis suggests that cost-cutting objectives serve as an underlying mechanism through which collective bargaining enhances M&A activity.

4.4.2. *Wealth Transfers: Direction and Magnitude*

Another way to gauge the cost-cutting channel is to look at the gains accruing to shareholders in target firms. In section 2, we argue that a large part of the takeover premium comes from rent expropriation from employees (Shleifer and Summers, 1988). Collective bargaining is generally viewed as a rent-seeking institution that successfully capture quasi-rents—such as higher wage and benefit premiums, higher staffing levels and a host of subtle constraints on management discretion and flexibility in its control of the workforce—that could have otherwise flowed to shareholders in the form of higher profits. In this section, we test (at the deal level) whether the shareholder gains from takeovers come at the expense of labor.

For that purpose, we perform OLS regressions of the following specification:

$$CAR_{it} = \alpha_j + \alpha_k + \alpha_t + \beta \cdot Labor_{kt} + \gamma \cdot X_{ikt} + \varepsilon_{it}. \quad (3)$$

Here CAR_{it} is, for deal i ,²⁰ the target's 3-day CAR (-1,+1) surrounding the acquisition announcement date, α_j , α_k and α_t are fixed effects for industry, country and year, $Labor_{kt}$ is one of the two measures of collective bargaining, X_{ikt} is a vector of control variables and ε_{it} the error term. To isolate the relationship between CAR and differences in countries' collective bargaining, we control for a host of deal-level, target firm-level, country-level and country-pair characteristics (X_{ikt}) that past researchers have shown help explain target announcement returns. These control variables are discussed in Section 3 and are more completely defined in Table A1. Standard errors are double-clustered by country and year.

Three comments are in order regarding this test. First, it is worth noting that the target CAR component largely reflects the premium paid by the acquirer (see Schwert, 2000). We also employ the offer premium in robustness. Second, from specification (3), we expect that β is greater than zero, indicating higher gains for target shareholders in countries with high collective bargaining.

²⁰ We focus here on deals representing an explicit change of control. Table A4 (Panel B) reports qualitatively similar results if we opt for other criteria in selecting deals.

If equation (3) is correctly specified, then β is an unbiased estimate of the additional gains when the target firm located in a country with high collective bargaining. Third, this test does not provide direct evidence on the source of the wealth transfers; however, it indicates both the magnitude and direction of wealth shift from employees to target shareholders.

Table 8 presents the results.²¹ In column (1), we only include deal-level and firm-level control variables with the fixed effects. The coefficient of interest (β in specification (3) above) is positive and significant at the 5% level. In column (2), we add to the previous specification country-level and country-pair determinants of CAR. β is positive and significant at the 5% level. In column (3), we estimate the same specification as in column (2) but we further account for firm-level determinants (i.e., total assets, leverage, market-to-book ratio, ROA, dividend per share and competition). The inclusion of the additional firm-level determinants in column (3) dramatically reduces the number of observations, but does not overturn the finding.

Across columns (1)-(3), the coefficient of union density is positive and always statistically significant at conventional levels, suggesting that collective bargaining positively impact on target firm CARs. These effects are economically meaningful. Increasing union density by one standard deviation leads from 51.9% to 64.2% increase from the average target return of 19.5% (taken from Table 2). In dollar terms, this implies a range of value creation for average-size target firms of \$96.4 to \$119.1 million. For median-size target firms, the increase is \$13.1 to \$16.1 million. Columns (4)-(6) repeat the analysis for bargaining coverage as an independent variable of interest. The results are in line with those linking union density and target CAR. Across the specifications, the coefficient on bargaining coverage is positive and significant at conventional levels. The economic significance is considerable as a one standard deviation increase in bargaining coverage implies a 35.4% to 42.2% increase from the average target return of 19.5%. In dollar terms, the increase ranges from \$65.7 to \$78.4 million for average-size target firms and from \$8.9 to \$10.6 million for median-size target firms.

We test the robustness of these results in the following ways. First, we alternatively measure target abnormal announcement returns over event days (-3,+3) and (-5,+5). Second, we use various other criteria in selecting deals. Third, we sequentially exclude from our sample targets in the US or the UK, in Scandinavian countries, in non-OECD countries, and in financial services

²¹ Due to data restrictions on some variables the following countries are removed from the CAR analysis: Brazil, Bulgaria, Estonia, Iceland, Latvia, Lithuania, Malta, and Slovakia.

industry. Fourth, we employ a measure of the offer premium as dependent variable. In all cases, we find that our results on the direction and magnitude of wealth transfers hold. For the sake of exposition, these robustness checks are relegated to the Appendix (see Table A4 Panels A-D).

The findings in this section are entirely consistent with the cost-cutting channel and provide clear indications on both magnitude and direction of wealth transfers going from employees to shareholders in target firms. However, these findings offer little insights into the *source* of these wealth transfers. In theory it could take the form of lower employment levels as well as lower wages and benefits. In the next section we provide insights into the source of such transfers.

4.4.3. Workforce Restructuring as a Source of Wealth Transfers

Since labor accounts for a large share of the costs in many firms, changes in employment associated with takeovers might explain a significant fraction of the takeover premium. A natural extension of our previous analysis is to assess the effect of collective bargaining on post-takeover layoffs, a potentially important source of wealth transfers. Our prediction is indeed that collective bargaining is associated with higher levels of workforce restructuring following takeovers. In this analysis we are, however, limited to the use of a fraction of our sample for which firm-level employment data are available. Also, we can only observe changes in employee headcount at the combined firm relative to the acquirer and the target before the deal. After a deal, layoffs should mostly occur at the target rather than the acquiring firm. Thus, the caveat, important to have in mind when analyzing the results, is that the former typically represents a smaller part of the combined firm, while the latter may also count a number of hiring and firing.

We first estimate the effect of takeovers on employment outcomes, and then examine how collective bargaining interacts in this association. To do so, we construct a panel at the deal-year level. All deals are followed over a five-year window around their completion, which allows to identify the dynamics of the total number of employees at the acquiring and target firms in the years surrounding the deal. The specification is the following:

$$y_{it} = \alpha_i + \alpha_t + \beta_1 \cdot Post\ Takeover_{it} + \beta_2 \cdot Labor_{kt} + \beta_3 \cdot (Post\ Takeover_{it} \times Labor_{kt}) + \gamma \cdot X_{kt} + \varepsilon_{it}, \quad (4)$$

where y_{it} is the log-number of employees of the acquirer and the target in year $t+x$, where t is the year of completion of the deal i , and $+x$ ($-x$) is the number of years after (before) the takeover.

α_i and α_t are fixed effects for deal and year, $Post\ Takeover_{it}$ is a dummy variable equal to one for the years after and equal to zero for the years prior to the takeover, $Labor_{kt}$ is one of our measures of collective bargaining, X_{kt} is a vector of country-level controls and ε_{it} the error term. As with above tests, we cluster standard errors by country and year.

Table 9 reports the estimation results. In column (1), we show the baseline estimate of the effect of takeovers on employment (*Post Takeover*), controlling for country-level determinants of takeovers as well as deal and year fixed effects. The coefficient of interest (β_1 in specification (4)) is negative and significant at the 1% level, meaning that, on average, following takeovers, employment at the combined firm decreases. In economic terms, post-takeover employment is reduced by 8.8% relative to the employment at the acquirer and the target prior to the deal. Reassuringly, this estimate is very in line with other studies (e.g., Davis et al. 2014; Dessaint et al., 2016). In column (2), we estimate the interaction with union density (*Post Takeover* \times *Union Density*). The effect of takeover on employment (β_1 in specification (4)) is still negative and significant. As predicted, the interaction term (β_3) is negative and significant, while the coefficient on union density (β_2) become insignificant albeit negative. The negative sign on the interaction term implies that the adverse effect of takeover on employment is further pronounced in countries where unions have stronger bargaining clout. In column (3), we evaluate the effect of bargaining coverage on workforce restructuring in post-takeover years and find a similar result. We show that there is a negative and significant reduction in the combined firm employment following takeovers, which is amplified in countries with high coverage of bargaining coordination. Again, the effects reported are large, with the estimate on the interaction term greater than the estimate on *Post Takeover* itself.

These results indicate that after takeovers combined firms in countries with higher prevalence of collective bargaining experience significantly larger job reductions. Although these results on the source of wealth transfers are partial (wage cuts, pension termination might also account for a significant part of these transfers²²), the economic effect is large and suggests that workforce restructuring represents a primary source of wealth redistribution between target employees and shareholders. With this analysis we offer further support in favor of the cost-cutting channel interpretation for the effects on M&A activity that we documented above.

²² See, for example, Rosett (1990), Pontiff, Shleifer and Weisbach (1990), Ippolito and James (1992), and Petersen (1992).

4.4.4. Collective Bargaining and Deal Completion Process

Our evidence thus far shows that the cost-cutting channel largely explains the documented positive relationship between collective bargaining and takeover activity. However, this evidence does not show why the new employer (i.e., acquirer), who potentially faces the same level of collective bargaining than its predecessor, will be able to restructure the workforce, boosting in turn gains and ultimately encouraging M&A activity. In this section, we argue that, once the merger agreement is signed, collective bargaining improves information-transmission between acquirer and employees compared to firms not endowed with coordinated dialog with employees. This is key for the acquirer in its ability to pass the necessary “employment” reforms within the firm. As stated in section 2, we predict that the high prevalence of collective bargaining increases the probability of deal completion and also speeds up deal completion process.

To test this, we estimate a specification similar to (3), with respectively the probability of deal completion and deal completion duration as dependent variables. Table 10 presents the results, while Table A1 contains variables definitions.²³ In columns (1)-(4) of Table 10, we study the probability of deal completion; that is, the dependent variable is a dummy variable equal to 1 if the deal is “completed” and 0 if “withdrawn”. Table 2 reports that in our sample 88.3% of deals are completed. In columns (5)-(8), we examine the speed with which an announced deal is completed, by defining deal completion duration as the total number of calendar days between the deal announcement date and the completion date. The mean (resp. median) of deal completion duration is 97 (resp. 72) days, with a standard deviation of 126 days (see Table 2).²⁴

In column (1), the coefficient of union density is positive and significant at the 10% level, suggesting that the union density increases the likelihood of completion. Column (2) repeats this specification with the further inclusion of EPL. Union density is once again positive and significant (1% level), while the coefficient on EPL displays a negative sign of lower magnitude than union density, consistent with our prior findings. As column (2) indicates, this is economically large: a one standard deviation increase in union density implies an increased probability of deal completion of 7.9% (i.e., 0.191×0.415). A one standard deviation increase in EPL reduces this

²³ Table 10 reports estimates from OLS models, but the use non-linear models (Logit or Probit), when the dependent variable is *Deal Completion*, yields even stronger results.

²⁴ The distribution of our sample variables is in line with other studies, such as Tian and Wang (2016), using US deals.

probability by 5.6% (i.e., 0.761×0.073). Similar insights apply for bargaining coverage reported in columns (3) and (4).

Turning to the duration of deal completion, columns (5)-(8) mirror the specifications in columns (1)-(4). The coefficients on either union density or bargaining coverage are always negative and significant at conventional levels. It takes much less time for acquirers in countries where collective bargaining is developed to complete deals. The EPL index in columns (6) and (8) does not affect deal completion duration. These findings suggest that collective bargaining is the crucial feature of the labor market influencing deal completion process. Economically, deal duration is reduced by 27-33 days when union density increases by one standard deviation (using estimates from columns (5) and (6)), which is about 28-35% shorter than the average deal duration of 97 days in our sample. From columns (7) and (8), we find that deal duration is about 19-20 days fewer when bargaining coverage decreases by one standard deviation. These results are consistent with the (non-mutually exclusive) view that collective bargaining facilitates the negotiation process and accordingly enhances M&A activity.

4.4.5. Other Potential Channels

In this section, we deal with potential alternative channels through which collective bargaining could operate. Table 11 reports the results. As before, we use the frequency of M&A as dependent variable, but we obtain similar results with the volume of M&A. First, innovation is another channel through which collective bargaining may positively impact on M&A activity. Manso (2011) argues that tolerance for failure is critical for motivating innovation. As innovation activities have high probability of failure, collective bargaining can provide firms a commitment device to not punish employees for short-run failures and, thereby, can appear to have positive ex ante effect on innovation. In other words, collective bargaining, by pushing wages upward and providing greater job security, encourages employees to increase their investment in skills and to pursue value-increasing innovative activities. Innovative firms accordingly tend to flourish in countries with greater collective bargaining. Acharya et al. (2013, 2014) show that employment protection spurs the extent of innovation in an economy, particularly in R&D-intensive industries, by enhancing employees' innovative efforts. Countries with greater collective bargaining increase target firms' attractiveness by creating a comparative edge in innovation-intensive industries,

which fosters M&A industry activity. Alimov (2015) shows that firms in OECD countries with stringent labor market regulations are more likely to be acquired by foreign acquirers if the firm is in a sector with high productivity and skill.²⁵ We thus investigate the differential effect of collective bargaining on the frequency of M&A across industries that differ in terms of R&D intensity. In columns (1) and (2), we run regression specification (2) by considering innovation intensity instead of labor intensity. We proxy innovation intensity with the industry median of R&D expenditures scaled by total book assets. The results reveal that the direct effect of collective bargaining, captured either through union density or bargaining coverage, is positive and significant at the 5% level, but not so for the interaction term. In fact, the interaction between union density (resp. bargaining coverage) and R&D intensity is negative and insignificant. This suggests that the industry effects of M&A activity caused by collective bargaining do not go through the innovation channel.

Second, the observed positive relationship in this study could be due to a business cycle effect. For example, it may be that unionization increases during booms as those are times when firms have higher cash holdings. Klasa, Maxwell and Ortiz-Molina (2009) show that unions bargain harder when firms are flushed with cash, and this may result in higher union density rates. At the same time, takeover waves are possibly driven by industry shocks and this depends on whether there is sufficient overall capital liquidity (Harford, 2005). This is more likely to be true during expansions. To rule out this alternative explanation, in all our analyses we have controlled for recession periods occurring in countries of our sample. Now, we examine the differential effect of collective bargaining on takeover activity over business cycle fluctuations. Our results in columns (3) and (4) show that this phenomenon is not affecting our posited causal relationship. As expected, recessions negatively and significantly impact on M&A activity. Union density and bargaining coverage still have a direct and significant effect on takeovers, while the interaction term is, quite surprisingly, also positive and significant. This means that collective bargaining exerts a more accentuated positive effect on M&A activity in recession periods. We rationalize this result as follows. In expansion periods when there is sufficient capital liquidity in the market, acquirers can better achieve revenue enhancements. Alternatively, in recession periods, targets

²⁵ Guadalupe, Kuzmina and Thomas (2012) analyze the likelihood of being a target by a foreign acquirer using a sample of Spanish firms. The authors find that foreign firms cherry pick the most productive firms within industries. They further find that following the acquisition, these firms are more likely to innovate.

with operational inefficiencies represent a comparative advantage for acquirers to achieve greater gains. The stronger positive effect of collective bargaining identified during recession periods supports the notion that in the absence of substantial revenue enhancement opportunities in those periods, acquirers choose their targets with high potential of cost-cutting; that is, precisely in countries where bargaining with unions is tougher.

The alternative arguments addressed in this section do not affect our main result; this increases our confidence in support of the prediction that collective bargaining does enhance takeover activity around the world.

5. Conclusions

This paper investigates the role of collective bargaining on the pattern of M&A activity. Similarly to Kanbur and Ronconi (2016), we argue that the focus on legal protections of employees, rather than on *actual* coordination through collective bargaining, may be misleading because institutionally distinct countries can and do achieve the same functional outcome through different means. In this attempt, this paper helps reconcile prior findings by illuminating one key channel of labor influence: collective bargaining. In a comprehensive sample of domestic and cross-border M&A from 46 countries over 1992-2010, we identify evidence that a country's collective bargaining system has a significant and economically meaningful impact on the frequency and volume of M&A activity. Controlling for industry-country and industry-year fixed effects as well as a multitude of industry-country characteristics including competition, growth prospects and profitability and countries' institutional quality, we find clear evidence of a positive relationship between union density and bargaining coverage and the frequency and volume of M&A at both industry and country levels.

Moreover, we find that the positive effect of the unionization and coverage by bargaining coordination on the pattern of M&A activity is more pronounced for industries in which labor is more important input of production. We further show greater wealth transfers from employees to target shareholders in countries with higher prevalence of collective bargaining. Workforce restructuring is a major source of wealth transfers. These findings appear consistent with the view that the actual bargaining power of employees over the firm generates gain opportunities sourced from the reappropriation (by shareholders) of employee rents. We further stress that collective

bargaining allows the realization of synergy gains because of its facilitating role during the pre-completion phase of deals.

This paper is part of a growing field of research at the intersections between labor economics and corporate governance. Although our findings offer new insights on this issue, it does suffer from potential limitations. International comparisons have the advantage of showing a broad picture and identifying the crucial role played by countries' institutional arrangements. This also constitutes the main drawback. Indeed, for the sake of comparability and data availability, we are constrained by the use of country-level proxies and by the focus only on target firms that are publicly traded. This may affect our ability to capture all the variation at the plant-level or at specific characteristics of employment contracts. Delving into such matters requires a considerable effort to match firm-level data on financial and balance sheet variables with contract-level or plant-level data on employment, wages and labor relations. The effort of joining such disparate datasets may partly explain why so far efforts in this direction have been limited, but this constitutes assuredly fruitful avenues for research.

This paper has also implications for the ongoing debate on the functioning and real effects of corporate governance mechanisms, and takeover markets in particular. Indeed, it supports that corporate governance problems become more acute when one takes into account the role played by labor market institutions or by firm constituencies with different horizons, interests and opportunities. This paper suggests that policy efforts that aim at improving corporate governance could benefit from taking into account the specificities of unionized firms and from designing sensible policies with respect to the specificities of a country's labor market institutions. From an academic standpoint, this paper suggests that researchers who want to study the functioning and real effects of takeover markets could benefit from interacting their proxies with indicators of both collective bargaining and employment legislations. To give an example, initial findings suggest that employment levels fall in years following a takeover (see, e.g., Bhagat et al., 1990). Similar to ours, the work by Li (2012) investigates in turn how labor unions interact in this relationship. Exploiting variations in US states with right-to-work laws (i.e., where labor unions face a less favorable bargaining environment), he finds, contrary to the conventional wisdom, that target firms in unionized industries experience relatively higher levels of wage and employment reductions. In another corporate governance context, Atanassov and Kim (2009) find that the stringency of employment legislations is less effective in preventing employee layoffs when financial leverage

is high. While this research drive takes an important path, more research is needed to better understand how governance mechanisms work in “labor-friendly” industries/countries and, thereby, affect social welfare.

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Figure 1. Collective Bargaining and Employment Protection Legislations

This figure presents union density (resp. bargaining coverage) by country relative to the OECD employment protection legislations (EPL) index in the graph above (resp. below). These indicators are averaged by country in our sample over the period 1992-2010. For each graph, correlation between the two indicators is indicated in the upper left-hand corner.

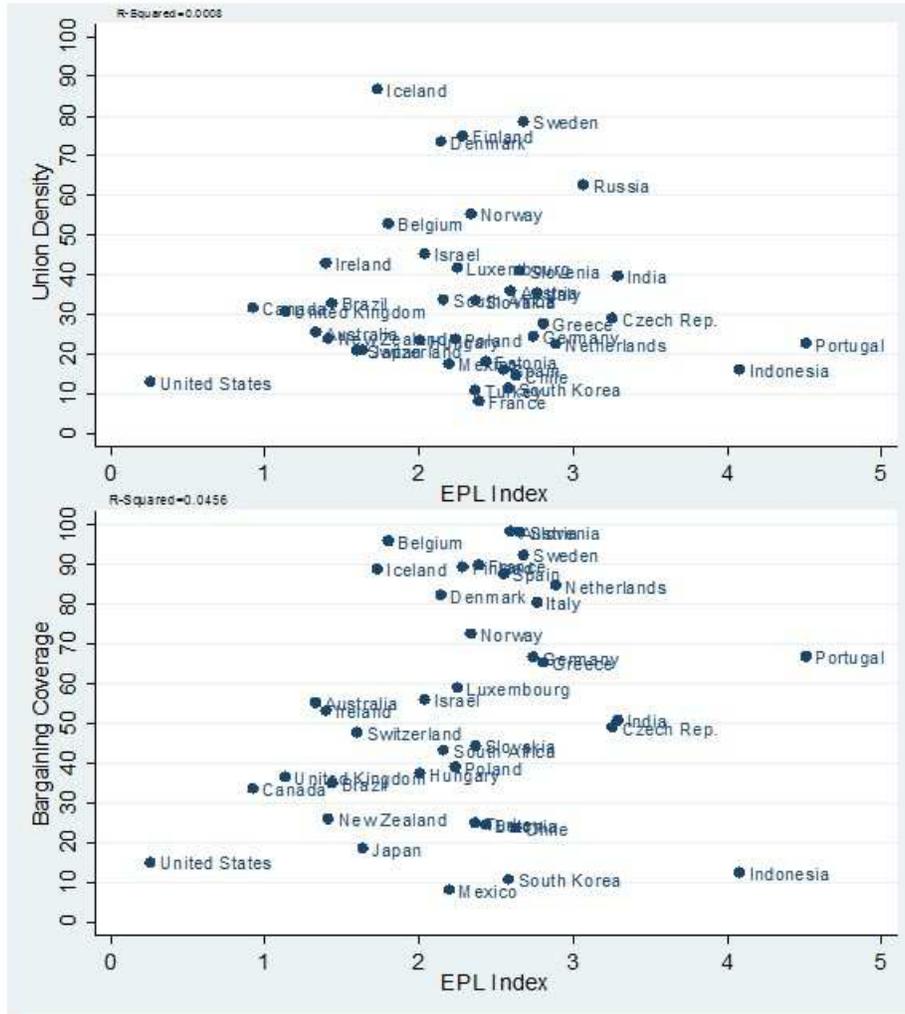


Figure 2. M&A Volume and Employment Protection

This figure presents the total dollar values of M&A deals (scaled by GDP) by country relative to union density in the graph above. The graph in the middle plots instead bargaining coverage, while the graph at the bottom plots the OECD employment protection legislations (EPL) index. All these measures are averaged by country in our sample over the period 1992-2010. In each graph, the slope corresponds to a regression of the total M&A deal values (scaled by GDP) on the employment protection indicator.

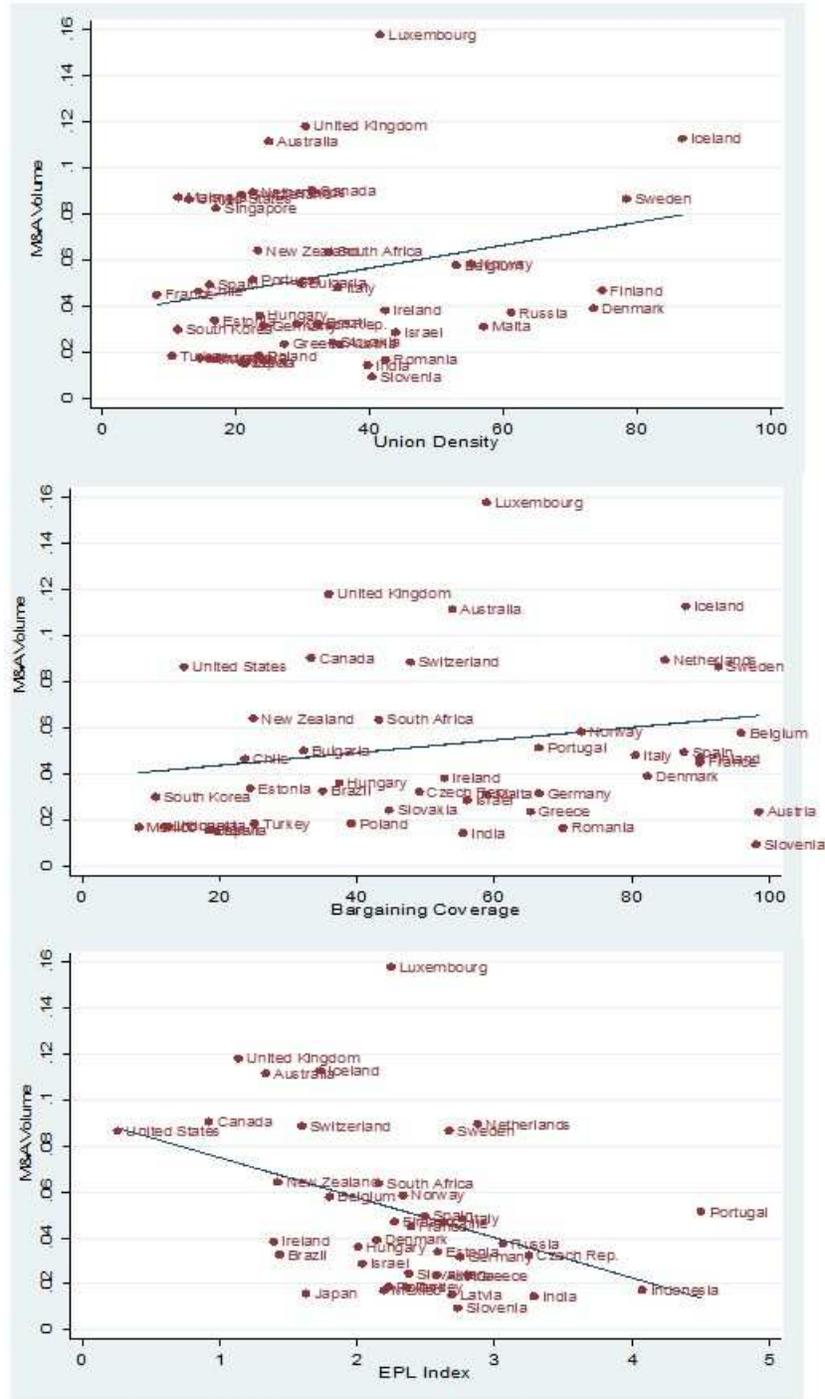


Table 1. Sample Composition

The table presents the M&A sample composition. Panel A describes the M&A sample by year. Panel B describes the M&A sample by country. The last row of Panels A and B reports the total number of M&A deals or the total \$ value of M&A deals. All variables are defined in Table A1.

Panel A - By Year

Year	Total Number of Deals			Total Volume of Deals [in \$ billion]		
	Number	Percentage	Cumulative Percentage	Total Value	Percentage	Cumulative Percentage
1992	841	0.03	0.03	89.07	0.01	0.01
1993	1106	0.03	0.06	159.52	0.01	0.02
1994	1412	0.04	0.10	126.95	0.01	0.03
1995	1633	0.05	0.15	398.88	0.03	0.06
1996	1980	0.06	0.21	474.87	0.03	0.09
1997	1749	0.05	0.26	576.96	0.04	0.13
1998	2040	0.06	0.33	1028.65	0.08	0.21
1999	2296	0.07	0.40	1732.93	0.13	0.34
2000	2158	0.07	0.46	1224.98	0.09	0.43
2001	1594	0.05	0.51	670.12	0.05	0.48
2002	1373	0.04	0.55	377.09	0.03	0.50
2003	1393	0.04	0.59	439.77	0.03	0.53
2004	1411	0.04	0.64	722.30	0.05	0.59
2005	1613	0.05	0.69	917.42	0.07	0.66
2006	1926	0.06	0.75	1440.87	0.11	0.76
2007	2351	0.07	0.82	1176.15	0.09	0.85
2008	2060	0.06	0.88	990.22	0.07	0.92
2009	2100	0.06	0.94	523.44	0.04	0.96
2010	1876	0.06	1.00	575.18	0.04	1.00
All Years	32912			13,645.35		

Panel B - By Country

Country	Total Number of Deals	Total Volume of Deals [in \$ billion]	Frequency of M&A	Volume of M&A	CAR (-1,+1)	Union Density		Bargaining Coverage		EPL	
						Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
Australia	2418	358.46	0.11	0.04	0.12	0.27	0.07	0.58	0.16	1.31	0.15
Austria	62	21.07	0.05	0.02	0.06	0.37	0.06	0.98	0.00	2.60	0.19
Belgium	149	80.78	0.06	0.01	0.17	0.53	0.02	0.96	0.00	1.79	0.05
Brazil	394	152.86	0.31	0.11	-	0.34	0.06	0.35	0.00	-	-
Bulgaria	10	1.28	0.00	0.01	-	0.33	0.17	0.32	0.04	-	-
Canada	2779	662.40	0.08	0.04	0.16	0.32	0.02	0.34	0.03	0.92	0.00
Chile	126	25.38	0.03	0.01	0.06	0.15	0.02	0.24	0.00	-	-
Czech Republic	31	10.47	0.03	0.03	0.04	0.29	0.13	0.49	0.08	3.25	0.11
Denmark	103	41.47	0.02	0.02	0.14	0.74	0.03	0.83	0.02	2.15	0.02
Estonia	15	0.45	0.05	0.03	0.14	0.18	0.15	0.24	0.04	-	-
Finland	152	36.03	0.10	0.03	0.19	0.75	0.04	0.89	0.05	2.33	0.19
France	1221	602.29	0.07	0.03	0.04	0.08	0.01	0.90	0.00	2.38	0.06
Germany	574	580.33	0.04	0.02	0.12	0.25	0.05	0.67	0.04	2.72	0.11
Greece	106	41.76	0.02	0.01	0.05	0.28	0.04	0.66	0.01	2.80	0.00
Hungary	25	0.70	0.04	0.01	0.11	0.27	0.17	0.37	0.04	2.00	0.00
Iceland	17	3.02	0.04	0.01	-	0.87	0.04	0.90	0.03	-	-
India	922	74.14	0.13	0.01	0.05	0.40	0.01	0.51	0.16	-	-
Indonesia	237	34.74	0.03	0.02	0.05	0.16	0.11	0.13	0.02	-	-
Ireland	68	10.67	0.06	0.02	0.08	0.44	0.08	0.54	0.06	1.40	0.07
Israel	202	27.52	0.12	0.02	0.04	0.48	0.15	0.56	0.00	-	-
Italy	522	390.47	0.10	0.04	0.06	0.36	0.02	0.81	0.01	2.76	0.00
Japan	3503	674.00	0.05	0.01	0.08	0.22	0.03	0.19	0.02	1.64	0.13
Latvia	5	0.03	0.00	0.01	-	0.21	0.04	0.20	0.03	-	-
Lithuania	24	0.46	0.04	0.03	-	0.15	0.07	0.12	0.02	-	-
Luxembourg	17	7.99	0.02	0.01	0.02	0.42	0.03	0.59	0.01	-	-
Malaysia	574	61.72	0.05	0.02	0.05	0.12	0.02	-	-	-	-
Malta	4	0.20	0.01	0.00	-	0.60	0.05	0.62	0.05	-	-
Mexico	114	90.07	0.05	0.02	0.08	0.18	0.03	0.08	0.01	2.19	0.00
Netherlands	188	165.80	0.07	0.02	0.20	0.23	0.02	0.85	0.02	2.90	0.08
New Zealand	336	21.41	0.17	0.05	0.08	0.26	0.08	0.29	0.15	1.39	0.16
Norway	434	90.33	0.09	0.04	0.13	0.56	0.02	0.72	0.01	2.33	0.00
Poland	204	24.46	0.09	0.03	0.02	0.24	0.06	0.39	0.02	2.23	0.00
Portugal	139	27.47	0.09	0.02	0.03	0.23	0.03	0.68	0.13	4.54	0.15
Romania	20	2.25	0.02	0.02	-0.10	0.47	0.16	0.70	0.00	-	-
Russia	230	180.37	0.07	0.04	-0.12	0.64	0.17	-	-	-	-
Singapore	614	67.45	0.07	0.02	0.12	0.17	0.02	-	-	-	-
Slovakia	2	0.01	0.00	0.00	0.03	0.34	0.16	0.44	0.04	2.37	0.12
Slovenia	4	0.10	0.00	0.01	0.00	0.43	0.10	0.98	0.03	-	-
South Africa	411	95.21	0.04	0.02	0.09	0.34	0.07	0.43	0.01	-	-
South Korea	1030	114.39	0.05	0.02	0.03	0.12	0.02	0.11	0.00	2.62	0.33
Spain	474	268.14	0.14	0.03	0.06	0.16	0.01	0.87	0.03	2.64	0.52
Sweden	444	131.87	0.10	0.04	0.16	0.79	0.06	0.92	0.02	2.69	0.09
Switzerland	157	174.50	0.02	0.01	0.09	0.21	0.03	0.48	0.00	1.60	0.00
Turkey	76	40.77	0.03	0.01	0.04	0.12	0.05	0.25	0.00	2.37	0.04
United Kingdom	2366	1269.15	0.08	0.03	0.16	0.32	0.04	0.38	0.06	1.12	0.08
United States	11409	6980.91	0.08	0.03	0.18	0.13	0.01	0.15	0.02	0.26	0.00
All Countries	32912	13,645.35	-	-	-	-	-	-	-	-	-

Table 2. Descriptive Statistics

The table presents the descriptive statistics of dependent variables, variables of interest, and deal-level, firm-level, industry-country-level, country-level and country-pair characteristics for the full sample which covers 46 countries over the period 1992-2010. All variables are defined in Table A1.

Variable Name	Mean	Standard Deviation	25th pctl.	Median	75th pctl.	Number of Observations
<i>Dependent Variables</i>						
Frequency of M&A	0.074	0.210	0.000	0.000	0.077	6488
Volume of M&A	0.025	0.082	0.000	0.000	0.010	6488
CAR (-1,+1)	0.195	0.265	0.039	0.146	0.289	6246
CAR (-3,+3)	0.210	0.280	0.046	0.163	0.315	5351
CAR (-5,+5)	0.214	0.287	0.046	0.168	0.326	4646
Offer Premium	0.380	0.423	0.137	0.314	0.544	5898
Deal Completion	0.883	0.322	1.000	1.000	1.000	24713
Deal Completion Duration	97.459	125.632	22.000	72.000	132.000	21638
<i>Employment Protection</i>						
Union Density	0.300	0.191	0.167	0.246	0.362	6488
Bargaining Coverage	0.559	0.284	0.329	0.560	0.835	5566
EPL	2.151	0.761	1.595	2.246	2.679	5170
<i>Deal- and Firm-Level Characteristics</i>						
Deal Size	5.257	1.853	3.928	5.160	6.519	6246
Relative Deal Size	1.463	0.759	1.089	1.348	1.687	6246
Target Market Capitalization (\$ million)	951.933	4512.023	40.049	129.079	498.578	6246
Target Market Capitalization (ln)	5.014	1.806	3.715	4.868	6.214	6246
Cash Payment	0.511	0.500	0.000	1.000	1.000	6246
Financial Acquirer	0.128	0.334	0.000	0.000	0.000	6246
Toehold	0.160	0.367	0.000	0.000	0.000	6246
Friendly Deal	0.954	0.210	1.000	1.000	1.000	6246
Same Industry	0.547	0.498	0.000	1.000	1.000	6246
<i>Industry-Country-Level Characteristics</i>						
Total Assets	12.325	1.543	11.268	12.139	13.231	6488
Leverage	0.295	0.431	0.023	0.234	0.492	6488
Market-to-Book	0.017	0.017	0.010	0.014	0.020	6488
ROA	0.025	0.082	0.012	0.031	0.051	6488
Dividend Per Share	0.523	1.049	0.000	0.049	0.470	6488
Labor Intensity	6.845	1.380	6.097	6.831	7.689	6488
Herfindahl	0.299	0.266	0.096	0.208	0.418	6488
R&D Intensity	0.057	0.162	0.004	0.013	0.038	4239
<i>Country-Level Characteristics</i>						
GDP	26.620	1.334	25.669	26.444	27.506	6488
GDP Per Capita	9.765	0.952	9.219	10.063	10.466	6488
Recession	0.157	0.364	0.000	0.000	0.000	6488
Stock Market Capitalization	0.789	0.606	0.336	0.620	1.090	6488
Private Credit	0.956	0.502	0.565	0.928	1.234	6488
Trade Openness	0.891	0.699	0.531	0.680	0.974	6488
Investment Profile	9.634	2.217	7.833	10.333	11.500	6488
Quality of Institutions	12.445	2.825	10.167	13.000	15.000	6488
Democratic Accountability	5.409	0.961	5.000	6.000	6.000	6488
Unemployment Rate	0.503	0.239	0.300	0.460	0.650	6488
<i>Country-Pair Characteristics</i>						
Exchange Rate Volatility	0.009	0.030	0.000	0.000	0.000	6246
Same Legal Origin	0.928	0.259	1.000	1.000	1.000	6246
Cross-Border	0.152	0.359	0.000	0.000	0.000	6246

Table 3. Frequency of M&A

The table presents the estimates from OLS models explaining the frequency of M&A. The dependent variable is *Frequency of M&A*. The variables of interest are *Union Density* and *Bargaining Coverage*. Depending on specifications, the regressions control for industry-country-level and country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroskedasticity and double-clustered by industry-country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
<i>Collective Bargaining</i>								
Union Density	***0.353 (3.00)	***0.389 (3.12)	***0.392 (3.05)	***0.376 (2.77)				
Bargaining Coverage					***0.336 (2.82)	***0.348 (2.61)	**0.353 (2.56)	**0.375 (2.57)
<i>Industry-Country-Level Characteristics</i>								
Total Assets		0.010 (1.21)	0.009 (1.13)	-0.001 (0.14)		0.006 (0.73)	0.007 (0.74)	-0.01 (0.90)
Leverage		-0.012 (0.95)	-0.009 (0.67)	0.002 (0.15)		-0.003 (0.27)	0.000 (0.01)	0.013 (0.79)
Market-to-Book		0.024 (0.07)	-0.200 (0.51)	0.073 (0.19)		-0.192 (0.62)	-0.391 (1.23)	-0.116 (0.41)
ROA		-0.107 (1.23)	-0.101 (1.06)	-0.066 (0.71)		-0.189 (1.32)	-0.195 (1.24)	-0.179 (1.10)
Dividend Per Share		*-0.007 (1.82)	-0.005 (1.51)	-0.008 (1.25)		*-0.006 (1.82)	-0.005 (1.51)	-0.002 (0.34)
Labor Intensity		-0.004 (0.53)	-0.004 (0.49)	-0.002 (0.23)		0.000 (0.02)	0.000 (0.05)	0.004 (0.34)
Herfindahl		** -0.041 (2.45)	** -0.036 (2.03)	0.003 (0.11)		** -0.048 (2.17)	* -0.041 (1.80)	-0.035 (0.70)
<i>Country-Level Characteristics</i>								
GDP		-0.085 (0.70)	-0.110 (0.91)	-0.081 (0.68)		0.276 (1.25)	0.268 (1.20)	0.286 (1.27)
GDP Per Capita		0.059 (0.46)	0.091 (0.70)	0.075 (0.58)		-0.336 (1.47)	-0.322 (1.40)	-0.333 (1.42)
Recession		*-0.025 (1.85)	*-0.025 (1.83)	-0.020 (1.47)		*-0.027 (1.81)	*-0.026 (1.75)	-0.024 (1.63)
Stock Market Capitalization		0.008 (0.96)	0.009 (0.99)	0.006 (0.56)		0.007 (0.46)	0.008 (0.50)	0.004 (0.25)
Private Credit		0.020 (1.41)	0.019 (1.27)	0.019 (1.19)		0.015 (0.97)	0.013 (0.83)	0.016 (0.99)
Trade Openness		-0.002 (0.07)	0.000 (0.01)	0.003 (0.08)		**0.065 (2.08)	**0.072 (2.18)	*0.070 (1.90)
Investment Profile		0.006 (1.26)	0.007 (1.30)	0.007 (1.33)		0.004 (0.73)	0.004 (0.75)	0.003 (0.64)
Quality of Institutions		0.001 (0.12)	0.000 (0.07)	0.001 (0.15)		-0.002 (0.37)	-0.002 (0.33)	-0.002 (0.30)
Democratic Accountability		0.005 (0.74)	0.004 (0.62)	0.001 (0.21)		0.008 (0.94)	0.006 (0.69)	0.006 (0.75)
Year FE	Yes	Yes	-	-	Yes	Yes	-	-
Industry FE	Yes	Yes	-	-	Yes	Yes	-	-
Country FE	Yes	Yes	Yes	-	Yes	Yes	Yes	-
Industry × Year FE	-	-	Yes	Yes	-	-	Yes	Yes
Industry × Country FE	-	-	-	Yes	-	-	-	Yes
Adjusted R ²	0.104	0.110	0.138	0.309	0.092	0.101	0.131	0.315
Number of Observations	6488	6488	6488	6488	5590	5590	5590	5590
Number of Countries	46	46	46	46	43	43	43	43

Table 4. Volume of M&A

The table presents the estimates from OLS models explaining the volume of M&A. The dependent variable is *Volume of M&A*. The variables of interest are *Union Density* and *Bargaining Coverage*. Depending on specifications, the regressions control for industry-country-level and country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroskedasticity and double-clustered by industry-country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
Collective Bargaining								
Union Density	***0.353 (3.00)	**0.080 (2.08)	**0.081 (2.01)	**0.090 (2.03)				
Bargaining Coverage					*0.065 (1.91)	**0.082 (2.44)	**0.083 (2.27)	**0.092 (2.33)
Industry-Country-Level Characteristics								
Total Assets		0.001 (0.47)	0.001 (0.42)	0.003 (1.04)		0.001 (0.55)	0.001 (0.56)	0.000 (0.05)
Leverage		0.001 (0.25)	0.002 (0.41)	0.007 (1.40)		0.001 (0.37)	0.002 (0.46)	0.007 (1.34)
Market-to-Book		***-0.201 (3.43)	***-0.250 (3.21)	***-0.236 (2.99)		***-0.176 (2.78)	**_-0.218 (2.58)	**_-0.205 (2.25)
ROA		-0.03 (1.19)	-0.029 (1.15)	-0.023 (1.21)		-0.031 (1.03)	-0.037 (1.24)	-0.025 (0.78)
Dividend Per Share		0.000 (0.27)	0.001 (0.53)	0.000 (0.19)		0.001 (0.83)	0.001 (0.73)	0.002 (0.92)
Labor Intensity		-0.001 (0.60)	-0.001 (0.72)	-0.002 (1.33)		0.000 (0.33)	-0.001 (0.40)	0.000 (0.14)
Herfindahl		***-0.020 (3.28)	***-0.020 (3.12)	0.000 (0.04)		***-0.019 (2.80)	**_-0.018 (2.52)	-0.004 (0.34)
Country-Level Characteristics								
GDP		0.026 (0.74)	0.022 (0.64)	0.03 (0.77)		0.067 (1.45)	0.065 (1.37)	0.075 (1.51)
GDP Per Capita		-0.024 (0.63)	-0.02 (0.52)	-0.027 (0.64)		-0.075 (1.51)	-0.071 (1.43)	-0.083 (1.51)
Recession		-0.001 (0.43)	-0.001 (0.35)	-0.001 (0.26)		-0.003 (1.23)	-0.003 (1.07)	-0.003 (0.95)
Stock Market Capitalization		0.001 (0.32)	0.001 (0.48)	0.002 (0.49)		-0.002 (0.31)	-0.002 (0.23)	-0.001 (0.13)
Private Credit		0.007 (1.39)	0.007 (1.36)	0.006 (1.04)		0.009 (1.49)	0.009 (1.45)	0.009 (1.35)
Trade Openness		0.001 (0.11)	0.001 (0.05)	0.004 (0.29)		0.014 (0.78)	0.014 (0.77)	0.016 (0.88)
Investment Profile		-0.001 (0.48)	-0.001 (0.49)	0.000 (0.14)		**_-0.003 (2.44)	**_-0.003 (2.42)	**_-0.003 (2.14)
Quality of Institutions		0.001 (0.55)	0.001 (0.51)	0.001 (0.49)		0.002 (0.65)	0.002 (0.63)	0.002 (0.56)
Democratic Accountability		0.001 (0.59)	0.001 (0.56)	0.001 (0.42)		0.003 (1.00)	0.002 (0.90)	0.003 (0.92)
Year FE	Yes	Yes	-	-	Yes	Yes	-	-
Industry FE	Yes	Yes	-	-	Yes	Yes	-	-
Country FE	Yes	Yes	Yes	-	Yes	Yes	Yes	-
Industry × Year FE	-	-	Yes	Yes	-	-	Yes	Yes
Industry × Country FE	-	-	-	Yes	-	-	-	Yes
Adjusted R ²	0.070	0.075	0.104	0.202	0.059	0.066	0.101	0.195
Number of Observations	6488	6488	6488	6488	5590	5590	5590	5590
Number of Countries	46	46	46	46	43	43	43	43

Table 5. Employment Protection Legislations

The table presents the estimates from OLS models explaining the frequency of M&A. The dependent variable is *Frequency of M&A*. The variables of interest are *Union Density* (resp. *Bargaining Coverage*), *EPL* and the interaction between *EPL* and *Union Density* (resp. *Bargaining Coverage*). The regressions control for industry-country-level and country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroskedasticity and double-clustered by industry-country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4
<i>Employment Protection</i>				
Union Density	***0.427 (3.58)	***0.252 (2.60)		
Union Density × EPL		**0.337 (2.29)		
Bargaining Coverage			**0.199 (2.47)	***0.193 (2.68)
Bargaining Coverage × EPL				0.291 (1.60)
EPL	*-0.054 (1.67)	***-0.167 (2.95)	-0.021 (0.62)	*-0.147 (1.77)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.072	0.075	0.071	0.073
Number of Observations	4895	4895	4746	4746
Number of Countries	28	28	28	28

Table 6. Sensitivity Tests

This table presents the estimation results of several sensitivity tests on the frequency of M&A. Panel A presents the country-level results, Panel B presents the results from a “horse race” between *Union Density* and *Bargaining Coverage* and results using measures of *Union Density* and *Bargaining Coverage* from alternative sources (i.e., OECD or ILO), Panel C presents the results using various subsamples, and Panel D presents the results for alternative definitions of dependent variables. In all panels the dependent variable is *Frequency of M&A*, except in Panel A in which *Frequency of M&A* is aggregated at the country level (i.e., the total number of M&A deals per country-year divided by the number of listed firms per country-year). The variables of interest are *Union Density* and *Bargaining Coverage*. We include the same set of controls as in Table 4 for all models in all panels except in Panel A, in which we only include country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by industry-country and year for industry-level tests, and by country and year for country-level tests. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A - Country-Level Tests

	1	2	3	4
Collective Bargaining				
Union Density	**0.439 (2.09)	**0.414 (2.01)		
Bargaining Coverage			*0.432 (1.80)	*0.439 (1.87)
Country-Level Characteristics	-	Yes	-	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.268	0.266	0.272	0.269
Number of Observations	550	550	491	491
Number of Countries	46	46	43	43

Panel B - “Horse Race” and Alternative Data Sources

	1	2	3	4
	Horse Race	OECD Union Density	ILO Union Density	ILO Bargaining Coverage
Collective Bargaining				
Union Density	*0.300 (1.82)	***0.398 (2.82)	***0.190 (5.06)	
Bargaining Coverage	**0.286 (2.28)			**0.094 (2.14)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.088	0.064	0.092	0.071
Number of Observations	5566	3506	3732	3044
Number of Countries	43	33	46	42

Panel C - Subsamples

	1	2	3	4	5	6	7	8	9	10
Collective Bargaining										
Union Density	***0.424 (3.30)	***0.348 (2.78)	***0.467 (3.70)	*0.439 (1.71)	***0.362 (3.12)					
Bargaining Coverage						***0.378 (2.74)	***0.417 (3.12)	***0.231 (3.09)	*4.319 (1.80)	***0.335 (2.70)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UK & US Drop	Yes	-	-	-	-	Yes	-	-	-	-
Scandinavian Countries Drop	-	Yes	-	-	-	-	Yes	-	-	-
Non-OECD Drop	-	-	Yes	-	-	-	-	Yes	-	-
OECD Drop	-	-	-	Yes	-	-	-	-	Yes	-
Financial Services Drop	-	-	-	-	Yes	-	-	-	-	Yes
Adjusted R ²	0.097	0.105	0.068	0.163	0.095	0.087	0.098	0.067	0.198	0.085
Number of Observations	6131	5939	4900	1616	5890	5232	5040	4750	854	5080
Number of Countries	46	43	28	18	46	41	40	28	15	43

Panel D - Alternative Definitions of Dependent Variables

	1	2	3	4	5	6	7	8
	Stake>10%	Bid for Control	Stake=100%	Including Failed Deals	Stake>10%	Bid for Control	Stake=100%	Including Failed Deals
Collective Bargaining								
Union Density	*0.115 (1.94)	***0.057 (3.38)	***0.053 (3.05)	***0.422 (3.02)				
Bargaining Coverage					**0.167 (2.49)	***0.065 (3.60)	**0.052 (2.23)	***0.397 (2.86)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.082	0.061	0.082	0.094	0.085	0.063	0.088	0.085
Number of Observations	6488	6488	6488	6488	5590	5590	5590	5590
Number of Countries	46	46	46	46	43	43	43	43

Table 7. Cross-Sectional Heterogeneity - Labor Intensity

The table presents the results from OLS regressions of cross-sectional heterogeneity analyses of the effect of collective bargaining. The dependent variable is *Frequency of M&A*. The variable of interest is the interaction of *Labor Intensity* (i.e., either industry median of the number of employees (ln) (columns (1)-(4)) or industry median of staff costs to sales ratio (columns (5)-(8))) with *Union Density* (resp. *Bargaining Coverage*). In all models, we include the same set of control variables as in Table 4. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by industry-country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
	Labor Intensity = ln(1+Number of Employees)				Labor Intensity = Staff Costs/Sales			
Variables of Interest								
Union Density	0.190 (1.31)	0.040 (0.22)			**0.297 (2.13)	*0.260 (1.91)		
Union Density × Labor Intensity	**0.024 (1.98)	**0.043 (2.07)			***0.044 (9.72)	***0.058 (9.09)		
Bargaining Coverage			0.176 (1.14)	0.134 (0.63)			***0.355 (2.65)	**0.351 (2.31)
Bargaining Coverage × Labor Intensity			**0.027 (2.31)	**0.039 (1.99)			***0.044 (4.36)	***0.055 (5.77)
Labor Intensity	-0.013 (1.44)	-0.016 (1.34)	-0.016 (1.53)	-0.02 (1.12)	-0.005 (1.12)	** -0.009 (1.97)	-0.012 (1.40)	** -0.016 (1.99)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	-	Yes	-	Yes	-	Yes	-
Industry FE	Yes	-	Yes	-	Yes	-	Yes	-
Country FE	Yes	-	Yes	-	Yes	-	Yes	-
Industry × Year FE	-	Yes	-	Yes	-	Yes	-	Yes
Industry × Country FE	-	Yes	-	Yes	-	Yes	-	Yes
Adjusted R ²	0.102	0.237	0.089	0.223	0.077	0.110	0.080	0.108
Number of Observations	6488	6488	5590	5590	4529	4529	4036	4036
Number of Countries	46	46	43	43	46	46	43	43

Table 8. Target CAR

The table presents the estimates from OLS models explaining target CAR. The dependent variable is *CAR* ($-I, +I$). The variables of interest are *Union Density* and *Bargaining Coverage*. Depending on specifications, the regressions control for deal-level, firm-level, country-level and country-pair characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6
<i>Collective Bargaining</i>						
Union Density	**0.625 (2.40)	**0.530 (2.02)	*0.655 (1.86)			
Bargaining Coverage				**0.266 (1.98)	**0.290 (2.18)	*0.243 (1.75)
<i>Deal- and Firm-Level Characteristics</i>						
Deal Size	0.001 (0.10)	0.002 (0.13)	0.007 (1.01)	0.001 (0.10)	0.001 (0.09)	0.003 (0.52)
Relative Deal Size	***0.119 (7.66)	***0.118 (7.90)	***0.079 (6.14)	***0.120 (8.10)	***0.120 (8.39)	***0.087 (9.18)
Target Market Capitalization	-0.012 (0.81)	-0.013 (0.85)	-0.004 (1.37)	-0.012 (0.73)	-0.012 (0.75)	-0.004 (0.75)
Cash Payment	***0.078 (14.55)	***0.079 (13.53)	***0.040 (4.99)	***0.078 (14.36)	***0.078 (12.96)	***0.037 (4.63)
Financial Acquirer	***-0.042 (4.62)	***-0.042 (4.30)	** -0.013 (2.09)	***-0.042 (4.72)	***-0.042 (4.53)	** -0.013 (2.02)
Toehold	***0.032 (10.11)	***0.032 (8.95)	***0.015 (3.50)	***0.033 (16.62)	***0.034 (11.31)	***0.015 (4.20)
Friendly Deal	0.023 (1.26)	0.023 (1.17)	***0.013 (2.66)	0.023 (1.15)	0.024 (1.14)	*0.013 (1.82)
Same Industry	0.009 (1.18)	0.009 (1.20)	***0.024 (3.31)	0.009 (1.16)	0.009 (1.16)	***0.026 (3.23)
<i>Country-Level Characteristics</i>						
GDP		0.024 (0.09)	-0.091 (0.32)		*0.436 (1.68)	-0.217 (0.79)
GDP Per Capita		0.040 (0.14)	0.131 (0.39)		-0.357 (1.33)	0.293 (1.13)
Recession		***0.044 (2.67)	-0.012 (0.71)		**0.035 (2.31)	0.003 (0.21)
Stock Market Capitalization		0.016 (0.65)	0.018 (0.69)		-0.006 (0.22)	*-0.037 (1.74)
Private Credit		** -0.051 (2.00)	-0.026 (0.84)		***-0.089 (3.01)	-0.017 (0.36)
Trade Openness		-0.102 (1.42)	*-0.078 (1.84)		-0.035 (0.32)	-0.007 (0.06)
Investment Profile		***-0.016 (3.21)	-0.002 (0.23)		***-0.019 (3.24)	0.002 (0.26)
Quality of Institutions		-0.008 (0.94)	***-0.013 (2.76)		-0.004 (0.47)	-0.009 (0.93)
Democratic Accountability		-0.008 (0.39)	-0.015 (0.90)		0.010 (0.44)	-0.039 (0.91)
<i>Country-Pair Characteristics</i>						
Exchange Rate Volatility		0.038 (0.20)	** -0.215 (2.18)		0.047 (0.26)	** -0.166 (2.00)
Same Legal Origin		-0.022 (1.14)	***-0.021 (2.66)		-0.023 (1.19)	-0.013 (1.61)
Cross-Border		-0.014 (0.55)	0.011 (1.24)		-0.016 (0.64)	0.008 (0.81)

Additional Firm-Level Characteristics

Total Assets			-0.005 (1.04)			-0.002 (0.47)
Leverage			**0.002 (1.97)			0.001 (1.17)
Market-to-Book			** -0.006 (2.04)			-0.005 (1.46)
ROA			0.022 (0.89)			0.019 (0.77)
Dividend Per Share			0.007 (1.06)			0.007 (1.20)
Herfindahl			0.022 (0.36)			0.040 (0.50)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.213	0.213	0.192	0.212	0.213	0.199
Number of Observations	6246	6246	2272	6143	6143	2119
Number of Countries	38	38	30	37	37	28

Table 9. Post-Takeover Workforce Restructuring

This table presents estimates of the effect of collective bargaining on the combined number of employees following takeovers. All deals are followed over a five-year window around its completion. The dependent variable is the number of employees of the acquirer and the target combined (ln) in year $t+x$, where t is the year of the completion of the takeover, and $+x$ ($-x$) is the number of years after (before) the deal. The variables of interest are *Post Takeover* (i.e., a dummy equal to 1 if t is positive and 0 otherwise), *Union Density* (resp. *Bargaining Coverage*), and the interaction between *Post Takeover* and *Union Density* (resp. *Bargaining Coverage*). The regressions control for country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by country and year. t -statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3
<i>Variables of Interest</i>			
Post Takeover	***-0.088 (3.15)	***-0.054 (2.70)	***-0.083 (2.79)
Post Takeover × Union Density		*-0.186 (1.93)	
Post Takeover × Bargaining Coverage			*-0.088 (1.81)
Union Density		-0.231 (0.64)	
Bargaining Coverage			-0.23 (0.71)
Country-Level Characteristics	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Deal FE	Yes	Yes	Yes
Adjusted R ²	0.065	0.066	0.054
Number of Observations	26750	26617	25382
Number of Countries	46	46	43

Table 10. Deal Completion Process

The table presents the estimates from OLS models explaining deal completion and duration. The dependent variable is either *Deal Completion* or *Deal Completion Duration*. The variables of interest are *Union Density*, *Bargaining Coverage* and *EPL*. Depending on specifications, the regressions control for deal-level, firm-level, and country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
	Deal Completion				Deal Completion Duration			
<i>Employment Protection</i>								
Union Density	*0.294 (1.86)	***0.415 (2.92)			** -140.303 (2.34)	*** -172.652 (3.56)		
Bargaining Coverage			***0.178 (2.71)	***0.227 (4.84)			** -66.878 (2.51)	** -68.796 (2.06)
EPL		** -0.073 (2.28)		*** -0.086 (2.64)		-2.279 (0.13)		-11.089 (0.55)
Deal- and Firm-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.059	0.068	0.064	0.068	0.126	0.149	0.136	0.149
Number of Observations	24713	22475	23435	22371	21638	19580	20491	19487
Number of Countries	46	28	43	28	46	28	43	28

Table 11. Other Potential Channels

The table presents the estimates from OLS models explaining the frequency of M&A. The dependent variable is *Frequency of M&A*. Columns (1) and (2) present the results from the differential effect of *Union Density* (resp. *Bargaining Coverage*) across industries that differ in terms of *R&D Intensity* (i.e., industry median of the ratio of R&D expenditures to total assets). Columns (3) and (4) present the results from the differential effect of *Union Density* (resp. *Bargaining Coverage*) across recession periods (i.e., years in which GDP growth of a country is negative in two consecutive quarters). In all models, we include the same set of control variables as in Table 4. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by industry-country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4
	R&D Intensity		Recession Periods	
<i>Variables of Interest</i>				
Union Density	**0.441 (2.45)		***0.397 (3.11)	
Bargaining Coverage		**0.310 (2.14)		**0.281 (2.42)
Union Density × R&D Intensity	-0.103 (1.24)			
Bargaining Coverage × R&D Intensity		-0.049 (0.83)		
Union Density × Recession			**0.048 (2.11)	
Bargaining Coverage × Recession				*0.058 (1.85)
R&D Intensity	0.030 (0.75)	0.031 (0.78)		
Recession	-0.012 (0.80)	-0.009 (0.51)	** -0.039 (2.38)	*** -0.053 (2.84)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.104	0.102	0.098	0.087
Number of Observations	4239	3796	6488	5590
Number of Countries	46	43	46	43

Table A1. Variables Definitions and Sources

Variable Name	Definition and Source
<i>Dependent Variables</i>	
Frequency of M&A	The total number of M&A deal per industry-year divided by the number of listed firms per industry-year in a target country (<i>Sources</i> : SDC and Worldscope).
Volume of M&A	The sum of dollar value of M&A deals per industry-year divided by total market capitalization of listed firms per industry-year in a target country (<i>Sources</i> : SDC and Worldscope).
CAR (-1,+1)	The cumulative abnormal return of target firms calculated over a 3-day window around the announcement date. 5-day and 11-day event windows are also used in robustness. Abnormal returns are calculated using the market model relative to a local equity market index. The value weighted index for US firms is obtained from CRSP, while for other countries local indices (proxies of market portfolio) are retrieved from Worldscope. The parameters of the market model are 200-days estimation period spread over (-236,-36) (<i>Sources</i> : CRSP, Compustat Global, and authors' calculations).
Offer Premium	Offer price relative to target market price four weeks prior to M&A announcement (<i>Source</i> : SDC).
Deal Completion	Dummy variable equal to 1 if SDC reports deal status as "completed", and 0 if "withdrawn" (<i>Source</i> : SDC).
Deal Completion Duration	Number of calendar days between the deal announcement date and the completion date (<i>Source</i> : SDC).
<i>Employment Protection</i>	
Union Density	Net union memberships divided by all wage and salary earners in employment; it ranges from 0 to 1 and is time-varying (<i>Source</i> : ICTWSS).
Bargaining Coverage	Total number of employees covered by collective (wage) bargaining agreements divided by all wage and salary earners in employment with the right to bargaining, adjusted for the possibility that some sectors or occupations are excluded from the right to bargain (removing such groups from the employment count before dividing the number of covered employees over the total number of dependent workers in employment); it ranges from 0 to 1 and is time-varying (<i>Source</i> : ICTWSS).
EPL	Index measuring the strictness of regulations that an employer has to follow in order to dismiss a worker with a regular contract; it ranges from 0 to 6 and is time-varying (<i>Source</i> : OECD).
<i>Deal- and Firm-Level Characteristics</i>	
Deal Size	The natural logarithm of the dollar value of M&A deal (<i>Source</i> : SDC).
Relative Deal Size	The ratio of deal value to the market capitalization of target firm 4 weeks prior to announcement date (<i>Source</i> : SDC).
Target Market Capitalization	The natural logarithm of market capitalization of target firm 4 weeks prior to announcement date (<i>Source</i> : SDC).
Cash Payment	Dummy variable equal to 1 if 100% of deal value is paid in cash, and 0 otherwise (<i>Source</i> : SDC).
Financial Acquirer	Dummy variable equal to 1 if acquirer is a financial firm, and 0 otherwise (<i>Source</i> : SDC).
Toehold	Dummy variable equal to 1 if acquirer owns non-zero percentage shares in the target firm before the announcement of the deal, and 0 otherwise (<i>Source</i> : SDC).
Friendly Deal	Dummy variable equal to 1 if deal attitude is classified as "Friendly" by SDC, and 0 otherwise (<i>Source</i> : SDC).
Same Industry	Dummy variable equal to 1 if acquirer and target 2-digit SIC code is the same, and 0 otherwise (<i>Source</i> : SDC).
<i>Industry-Country-Level Characteristics</i>	
Total Assets	The industry median of dollar value of the natural logarithm of total assets (<i>Sources</i> : CRSP and Worldscope).
Leverage	The industry median of debt-to-equity ratio. It is calculated as long term debt minus cash and cash equivalents divided by book value of common equity (<i>Sources</i> : CRSP and Worldscope).
Market-to-Book	The industry median of market-to-book ratio. It is calculated as market value of common equity divided by book value of common equity (<i>Sources</i> : CRSP and Worldscope).
ROA	The industry median of return on assets. It is calculated as EBITDA divided by book value of total assets (<i>Sources</i> : CRSP and Worldscope).

Dividend Per Share	The industry median of dividend per share (<i>Sources: CRSP and Worldscope</i>).
Labor Intensity	The industry median of the natural logarithm of total number of employees (<i>Sources: CRSP and Worldscope</i>).
Herfindahl	The sum of squares of market share of individual firm in the same 12-FF industry. Market share is calculated as the dollar value of sales of a firm divided by the total dollar value of sales volume of the industry (Authors' calculation).
R&D Intensity	The industry median of the ratio of total R&D expenditures to total book assets (<i>Sources: CRSP and Worldscope</i>).
Country-Level Characteristics	
GDP	The natural logarithm of Gross Domestic Product (<i>Source: World Bank</i>).
GDP Per Capita	Per capita Gross Domestic Product in US dollars (<i>Source: World Bank</i>).
Recession	Dummy variable equal to 1 if Gross Domestic Product growth is negative in two consecutive quarters within year for a country (<i>Source: OECD</i>).
Stock Market Capitalization	The ratio of total market capitalization of listed companies to Gross Domestic Product (<i>Source: World Bank</i>).
Private Credit	The ratio of private credit provided to private sector to Gross Domestic Product (<i>Source: World Bank</i>).
Trade Openness	The ratio of imports and exports of goods and services to Gross Domestic Product (<i>Source: World Bank</i>).
Investment Profile	Time-varying index measuring the government's attitude toward investment. The investment profile is determined by summing the three following components: (1) risk of expropriation or contract viability; (2) payment delays; and (3) repatriation of profits. Each component is scored on a scale from 0 (very high risk) to 4 (very low risk) (<i>Source: ICRG</i>).
Quality of Institutions	Time-varying index measuring institutional quality of a country, which is calculated by summing the three following components: (1) corruption; (2) law and order; and (3) bureaucratic quality. High score indicates countries with higher institutional quality and vice versa (<i>Source: ICRG</i>).
Democratic Accountability	Time-varying index measuring government's responsiveness to its people. The less responsive government will fall peacefully in democratic society and possibly violently in non-democratic society. High score indicates higher democratic accountability and vice versa (<i>Source: ICRG</i>).
Unemployment Rate	Total unemployment as a percentage of total labor force (<i>Source: World Bank</i>).
Country-Pair Characteristics	
Exchange Rate Volatility	The standard deviation of exchange rates between acquirer and target countries from 36 months up to 1 month relative to the deal announcement date (authors' calculation).
Same Legal Origin	Dummy variable equal to 1 if acquirer and target countries have the same legal origin, and 0 otherwise. (<i>Source: Djankov et al., 2008</i>).
Cross-Border	Dummy variable equal to 1 if acquirer and target are headquartered in two different countries, and 0 otherwise (<i>Source: SDC</i>).

Table A2. Changes in Collective Bargaining and Macroeconomic and Institutional Dynamics

This table reports the analysis of macroeconomic and institutional dynamics in the year prior to changes in collective bargaining. The dependent variable is the first difference of *Union Density* (resp. *Bargaining Coverage*). The variables of interest are lagged value of change in macroeconomic and institutional factors. All variables are defined in Table A1. Inclusion of fixed effects (FE) is indicated at the end. Standard errors are adjusted for heteroscedasticity and clustered by country. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4
	Union Density		Bargaining Coverage	
Macroeconomic Fundamentals				
GDP Growth	0.000 (0.11)	0.000 (0.65)	0.001 (0.86)	0.001 (0.45)
GDP Per Capita	-0.001 (0.76)	0.000 (0.23)	0.000 (0.24)	0.000 (0.11)
Stock Market Capitalization	0.000 (0.05)	0.000 (0.12)	0.000 (1.33)	*-0.000 (2.01)
Private Credit	-0.011 (0.83)	0.006 (0.62)	-0.020 (0.89)	-0.030 (1.10)
Unemployment Rate	0.072 (0.57)	0.113 (1.01)	0.030 (0.20)	-0.068 (0.41)
Institutional Arrangements				
Quality of Institutions	-0.002 (0.96)	-0.002 (1.08)	0.000 (0.02)	0.001 (0.23)
Investment Profile	0.001 (0.37)	-0.002 (1.24)	0.005 (1.24)	0.006 (1.22)
Democratic Accountability	0.001 (0.33)	0.001 (0.42)	0.004 (0.90)	0.003 (0.54)
EPL		-0.007 (1.33)		-0.086 (0.95)
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.16	0.236	0.019	0.042
Number of Observations	432	279	346	253
Number of Countries	46	28	43	28

Table A3. Alternative Estimation Methods and Dependent Variables - Takeover Activity

This table presents the estimation results of several sensitivity tests. Columns (1)-(8) present the estimates from Tobit models using various definitions of dependent variables. The dependent variables are: *Frequency of M&A* in columns (1) and (2), *Volume of M&A* in columns (3) and (4), *Number of Deals* (ln) in columns (5) and (6), *\$ Deal Value* (in \$ million, ln) in columns (7) and (8). Columns (9)-(12) present the estimates from WLS models using *Number of Deals* (ln) in columns (9) and (10) and *\$ Deal Value* (in \$ million, ln) in columns (11) and (12) as dependent variables. The specification “WLS” is weighted least squares in which the weight is the average number of listed firms in the country over the sample period. The variables of interest are *Union Density* and *Bargaining Coverage*. In all models, we control for industry-country-level and country-level characteristics. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by industry-country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8	9	10	11	12
	Frequency of M&A		Volume of M&A		ln(1+Number of Deals)		ln(1+ \$ Deal Value)		ln(1+Number of Deals)		Ln(1+ \$ Deal Value)	
Collective Bargaining												
Union Density	***1.003 (3.75)		***0.296 (2.76)		***2.807 (3.03)		**8.003 (2.18)		***1.842 (2.92)		**5.194 (2.50)	
Bargaining Coverage		***0.648 (3.83)		***0.231 (2.60)		*1.099 (1.88)		**4.908 (2.13)		***1.534 (3.20)		***3.251 (2.79)
Industry-Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Estimation Method	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	Tobit	WLS	WLS	WLS	WLS
Log Likelihood	-2552.48	-2085.42	-486.788	-331.375	-5961.58	-5278.73	-9188.53	-8157.86	-	-	-	-
Pseudo R ²	0.234	0.249	0.592	0.654	0.278	0.289	0.146	0.152	-	-	-	-
Adjusted R ²	-	-	-	-	-	-	-	-	0.71	0.707	0.461	0.456
Number of Observations	6488	5590	6488	5590	6488	5798	6488	5798	6488	5798	6488	5798
Number of Countries	46	43	46	43	46	43	46	43	46	43	46	43

Table A4. Sensitivity Tests - Target CAR and Offer Premium

This table presents the estimation results of several sensitivity tests on target CAR. Panel A presents the results using *CAR* (-3,+3) and *CAR* (-5,+5) as dependent variables, Panel B presents the results for alternative definitions of dependent variables, Panel C presents results using various subsamples, and Panel D presents the results using *Offer Premium* as dependent variable. The dependent variable is *CAR* (-1,+1) in Panels B and C. The variables of interest are *Union Density* and *Bargaining Coverage*. We include the same set of control variables as in Table 9. Inclusion of fixed effects (FE) is indicated at the end. All variables are defined in Table A1. Standard errors are adjusted for heteroscedasticity and double-clustered by country and year. *t*-statistics are in parentheses. Significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A - Wider Event Windows

	1	2	3	4
	CAR (-3,+3)	CAR (-5,+5)	CAR (-3,+3)	CAR (-5,+5)
Collective Bargaining				
Union Density	*0.525 (1.96)	***0.842 (3.08)		
Bargaining Coverage			***0.490 (2.69)	***0.534 (2.81)
Deal- and Firm-Level Characteristics	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes
Country-Pair Characteristics	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.217	0.227	0.244	0.256
Number of Observations	5351	4646	5272	4578
Number of Countries	36	35	33	32

Panel B - Alternative Definitions of Dependent Variables

	1	2	3	4	5	6
	All Deals	Stake= 5-49%	Stake=100%	All Deals	Stake= 5-49%	Stake=100%
Collective Bargaining						
Union Density	***0.485 (2.66)	*0.291 (1.93)	***1.103 (5.21)			
Bargaining Coverage				***0.291 (3.74)	***0.097 (3.96)	***0.608 (2.68)
Deal- and Firm-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Country-Pair Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.234	0.096	0.233	0.237	0.098	0.233
Number of Observations	11257	4065	4551	10855	3796	4530
Number of Countries	38	36	33	34	33	30

Panel C - Subsamples

	1	2	3	4	5	6	7	8
Collective Bargaining								
Union Density	***1.102 (3.96)	***1.087 (3.25)	***0.999 (2.85)	***1.191 (2.79)				
Bargaining Coverage					***0.317 (3.01)	**0.395 (2.33)	**0.470 (2.51)	**0.479 (2.13)
Deal- and Firm-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Level Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Pair Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UK & US Drop	Yes	-	-	-	Yes	-	-	-
Scandinavian Countries Drop	-	Yes	-	-	-	Yes	-	-
Non-OECD Drop	-	-	Yes	-	-	-	Yes	-
Financial Services Drop	-	-	-	Yes	-	-	-	Yes
Adjusted R ²	0.219	0.238	0.236	0.240	0.21	0.237	0.236	0.239
Number of Observations	1220	5074	5095	3800	1194	5048	5094	3785
Number of Countries	34	33	28	36	31	29	28	33

Panel D - Offer Premium

	1	2
Collective Bargaining		
Union Density	**0.667 (2.04)	
Bargaining Coverage		**0.308 (2.13)
Deal- and Firm-Level Characteristics	Yes	Yes
Country-Level Characteristics	Yes	Yes
Country-Pair Characteristics	Yes	Yes
Year FE	Yes	Yes
Industry FE	Yes	Yes
Country FE	Yes	Yes
Adjusted R ²	0.506	0.507
Number of Observations	5809	5716
Number of Countries	35	32