IMPROVING BARGAINING POWER OR PUTTING SAFETY FIRST? OWNERSHIP STRUCTURE AND THE EFFECT OF LABOR MARKET REGULATION ON LEVERAGE

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Abstract

While previous work suggests two competing explanations for the effect of labor market regulation on firms' demand for debt, our results reconcile both the "strategic use of debt" and "financial flexibility" view. Exploiting staggered changes to labor laws in non-financial, non-utility listed firms in 28 OECD countries over a 20-year period, we find that the average causal effect of employment protection on firm financial leverage is close to zero but hides much heterogeneity depending on firm ownership structure. We find that higher ownership concentration mitigates the positive effect of labor power on financial leverage, making the relationship less positive or more negative. The economic intuition underlying these findings is that a regulatory-induced increase in labor power (i) gives widely-held firms a strategic incentive to raise more debt to improve their power position vis-à-vis labor, but (ii) encourages firms with poorly diversified blockholders to react with a more conservative financial policy due to increase of operating leverage and the risk of financial distress. This result does not seem to be driven by pretreatment differences among firms, is robust to endogeneity concerns and against a wide variety of further tests. Our results highlight the importance of ownership heterogeneity in studying firms' capital structure decisions.

Keywords: Financial leverage, ownership structure, labor market regulation, labor power, financial flexibility

JEL Classification: G32, G33, J31, K31

I. Introduction

Does labor market regulation affect firms' capital structure decision and if so, how and why? While these questions have received considerable attention in empirical corporate finance literature over the last years (e.g. Matsa (2010), Simintzi et al. (2015), Serfling (2016), Ellul and Pagano (2017), Qiu (2017)), results of the extant research are mixed and the related debate is still open. In this paper, we attempt to further extend the understanding of underlying mechanisms and causes at work and argue that heterogeneity in ownership structures and associated differences in risk preferences of (influential) shareholders might explain the puzzle. We hypothesize a moderating effect of ownership structure in the labor-leverage nexus and develop a new conceptual framework.

Our framework builds on prior literature that offers two competing views to explain the role of labor market frictions for firms' financing choices. Proponents of the "strategic use of debt" view argue theoretically that firms respond to an increase in labor market rigidity by using debt as a strategic device to improve their bargaining position vis-à-vis employees (Bronars and Deere (1991), Perotti and Spier (1993), Dasgupta and Sengupta (1993)) and find empirically that stronger labor protection is associated with higher financial leverage (Matsa (2010), Benmelech et al. (2012), Myers and Saretto (2016), Ellul and Pagano (2017)). In contrast, advocates of the "financial flexibility" view reason that stricter labor market regulation increases operating leverage, which in turn crowds out financial leverage, and present supporting empirical findings (Kahl et al. (2014), Simintzi et al. (2015), Serfling (2016), Kuzmina (2018), Woods et al. (2019)). Yet, both views might not be mutually exclusive but rather complementary (Schmalz (2018), Qiu (2018)) and taken together they implicit that with increasing employment protection, firms face a trade-off between the benefit of additional leverage (as a strategic device in the bargaining process) versus its cost (higher risk of financial distress). Intuitively, the question arising is what firms are more likely to support strategic leverage or financial flexibility motives. In other words, what are omitted factors that moderate the effect of labor market regulation on firms' financial leverage? In this paper, we posit a moderating effect of firm's ownership structure and link this moderating effect to the size of the ownership stake and the type of an owner. In particular, we argue that inside owners and strategic blockholders are relatively less diversified and thus assign high costs to financial risks, while non-blockholders are relatively well diversified and thus, less concerned about the financial flexibility aspects but attach more importance to their power position vis-à-vis other stakeholders like labor.

Using firm-level data from 28 OECD countries over the 1994-2013, we employ a dynamic triple difference (hereinafter DDD) research design and exploit the exogenous

intertemporal variation in country-level employment protection legislation to analyze the ownership-related differential effects of a shift in labor power on financial leverage. Our analysis aims to complement and simultaneously extend previous studies in at least three dimensions. First, we attempt to reconcile two existing views and explicitly focus on the moderating factor "ownership structure". Second, we employ a dynamic triple-diff in the panel setting to account for pretreatment trends, persistence effects and reverse causality. Third, we benefit from the improved data availability compared to related studies (Serfling (2016), Simintzi et al. (2015)).

Our study reports new findings on the labor-leverage nexus, identifying that first, ownership matters in the labor-leverage nexus. Specifically, while firms with diffuse ownership structure uniformly increase their demand for debt following an increase in employment protection, firms with concentrated ownership structure display a more conservative debt policy. We find that in widely held firms, a one standard deviation increase in the employment protection is associated with *increase* in mean leverage by 246 basis points or 12% of its mean in the year after the change relative to the year before the change. Thereby, in firms with cumulative blockholding of 100%, a one standard deviation increase in the employment protection is associated with a *decrease* in mean leverage by 162 basis points or 8% of its mean in the year after the change relative to the year before the change. Both are after controlling for country-specific year trends and relative to control firms operating in the same industry but located in countries not undergoing a change in employment protection at the same point of time. Second, a change in employment protection exerts a lasting effect on financial leverage in both widely and closely held firms. Finally, the dynamic character of our research design allows to provide evidence that treated firms do not anticipate changes in employment protection in advance and do not adjust leverage before they have to bear the costs of a shift in labor power.

The advantage of the dynamic character of our research strategy is that it also explicitly addresses concerns that treatment and control groups may not share similar pretrends in leverage levels. Our results show no statistically significant change in leverage prior to a change in employment protection. To further mitigate concerns that our results are driven by pretreatment differences in characteristics of treated and control firms, we employ a range of matching techniques, with a special focus on propensity-score matching. Our previous findings remain robust to all matching specifications.

By narrowing the time window around a change in the employment protection, accounting for country-specific year trends and constructing different matched samples, we aim to deal with the concern that the observed treatment effect is not due to variation in labor protection, but rather due to potential confounds. To assuage these concerns further,

we proceed in two steps. *First*, we explore the political economy of changes in the employment protection. *Second*, we additionally include country-level characteristics as potential omitted variables into empirical specifications. Yet, the ownership-related differential effect of labor protection on leverage is unchanged.

In a series of further robustness tests, we validate our findings by addressing endogeneity concern of the measures of employment protection and ownership concentration, employing alternative definitions of ownership concentration, redefining our sample, and performing reform-by-reform regressions. Our findings hold in all specifications.

Overall, our paper documents that firms' ownership structure moderates the labor protection-leverage nexus. Moreover, consistent with our economic intuition crowding-out effect of financial leverage is only observed in firms with presumably imperfectly diversified influential shareholders. This study thus broadly contributes to the literature showing the importance of ownership heterogeneity. Our findings imply that ownership structure determines the appropriateness of the strategic use of debt or financial flexibility view in explaining the relationship between labor and leverage.

The remainder of this paper is structured as follows: Section II reviews the literature used to derive our hypothesis. Section III introduces the data and discusses empirical measures and method. Section IV presents our main findings. Section V reports the results of robustness checks and Section VI concludes.

II. Related Studies and Hypothesis Development

A. The Strategic Use of Debt vs. Financial Flexibility View

Two competing views shape the debate on the interplay between labor market frictions and firms' financing choices. The intuition behind *the strategic use of debt view* is that labor as a supplier with market power has the potential to influence rent distribution among stakeholders, thereby any labor-favorable legal changes empower employees to more effectively compete for a share of a firm's profit. To mitigate labor's rent-seeking behavior firms can use financial policy as a strategic tool (Bronars and Deere (1991), Perotti and Spier (1993)), just as they do it to absorb excess liquidity from unprofitable spending by managers (Jensen (1986)). Higher leverage increases the probability of financial distress and thus, the risk of displacement so that employees will be more willing to lower the portion of expropriated rents. Prior research also establishes a solid empirical support on the strategic use of debt (see e.g. Hanka (1998), Matsa (2010), Benmelech et al. (2012), Myers and Saretto (2016), Ellul and Pagano (2017)).

The strategic use of debt proposition has been initially challenged by Simintzi et al. (2015) who provide an alternative explanation for the labor-leverage nexus – *the financial flexibility view*. Exploiting shifts in employment protection legislation in 21 OECD countries, the authors find negative association between labor market rigidity and firms' financial leverage. They interpret these results as crowding-out effect of operating leverage on financial leverage. Conceptual framework of this motive implies that rigid labor market and related labor power imposes economically significant cost on firms[1] first, through the regulation of direct labor costs e.g. wages, severance pay or compensation after dismissal and second, through the operating inflexibility due to high hiring and firing costs that prevent labor cost adjustments. In combination, these forces amplify firms' fundamental operating risk and lead to an increased need for financial flexibility. Follow-up empirical studies provide supportive evidence (Kahl et al. (2014), Serfling (2016), Kuzmina (2018), Schmalz (2018)).

B. The Role of Ownership Structure in the Labor-Leverage Nexus

While the strategic use of debt and the financial flexibility views are conceptually different, this dichotomy is not so clear-cut assuming that response to changes in labor market rigidity is heterogeneous across firms.[2] Consistent with the contracting theory "the firm is not an individual" but "a nexus of contracts" between shareholders and various stakeholders like labor (Jensen and Meckling (1976)). Thus, examining the explanatory power of both views, one has to consider not only characteristics of the stakeholder "labor" but also characteristics of its contracting party, "shareholder".

As stated by financial literature, shareholders' roles and objectives condition on their ownership type and the size of their investment (Demsetz and Lehn (1985), Holderness and Sheehan (1988)). Accordingly, major corporate decisions – like financial policy – may differ in firms with controlling blockholder compared to widely-held firms (Holderness (2003)). In this paper, we suggest that ownership structure plays a moderating role in the labor-leverage relationship, namely firms with blockholders response to an increase in labor market rigidity with a (more) conservative financial policy than widely-held firms.

In terms of trade-off theory, due to legislative changes strengthening labor power firms face a trade-off between the benefit of additional leverage (as a strategic device in the bargaining process over rent expropriation) versus its cost (higher financial risks). The

[1] Earlier works demonstrate the relevance of operating costs for the firm and show that fixed labor costs may be an important source of operating leverage (Rubinstein (1973), Lev (1974), Danthine and Donaldson (2002)). Yet, labor regulation might make labor costs more fixed in nature and thus, increase operating costs which a firm has to pay independently of its performance.

[2] For a similar argumentation, see Chino (2016), Qiu (2018), Schmalz (2018).

question arising is how different type of shareholders balance the marginal costs of financial distress with the marginal benefits of improving their power position i.e. what type of shareholder is more likely (and is able) to support the strategic use of debt or the financial flexibility motives. First, we use the lens of blockholders considering these competing views. The four main determinates of the ability to successfully extract rents, proposed by negotiation and bargaining power literature (Marburger (1994), Pfeffer (1981), Porter (1980)) are: i) capability to act in a unified manner, ii) access to information, iii) replacement cost to the firm, and iv) exit costs. Influential blockholders do not need a union to act in a unified manner, since the line of authority is clear. They do not suffer from a lack of information and expertise (Shleifer and Vishny (1986)). Owning enough stocks to affect the price, they cannot be substituted easily by other investors. Hence, controlling shareholders typically have significant power over the firm (La Porta et al. (1999)) so that higher priority of enhancing shareholders' interests over those of employees is given by the nature of blockholding.

From the perspective of financial flexibility, concentrated ownership, however, implies potential drawbacks in terms of exit costs. Having large holdings of individual stocks results in failure to diversify and thus, being a subject to idiosyncratic firm-level shocks (Fama and Jensen (1983), Campbell et al. (2001)). Increasing employment protection raises firms' fundamental risk through increasing operating leverage and, as a result, costs of financial distress. Thereby, the latter is a function of the degree of diversification of the shareholder. As large blockholders are non-diversified, they will assign higher costs to financial risks and strive for more financial flexibility. While increasing leverage will amplify the effect on idiosyncratic firm risk and default is costly for purely diversified blockholders, they will prefer to reduce the amount of debt financing (or at least not to increase it).

In contrast to large influential blockholders, small shareholders are not concerned about the financial flexibility aspects, partly due to significantly lower bankruptcy costs. Non-blockholders are typically well-diversified and care mainly about the market risk and short-term returns. While the holding in one particular firm represents only a small proportion of their stock portfolio and thus, of their wealth, the bankruptcy of a firm does not imply the same drastic consequences compared to blockholders.

Small shareholders, however, are at a disadvantage regarding their power position vis-à-vis other stakeholders (Berle and Means (1932), Jensen and Meckling (1976), Coff (1999), Pagano and Volpin (2005), Atanassov and Kim (2009)). Having difficulties to coordinate their actions and being subject to the free-rider problematics, small investors are less able to act in a unified manner. In contrast to a large shareholder, they do not have either the incentive or the power to alleviate agency problems (Shleifer and Vishny, 1997).

Due to small stock holdings, diffuse shareholders can be potentially easily replaced as well. Thus, they have to care about an increasing labor power to extract rents, which, in turn, reduces the portion of current cash flow available for a payout. While too much financial flexibility might even hurt the already limited bargaining power of diffuse shareholders, raising debt can be used to protect firms from increasing labor power and costs.[3]

Therefore, our main hypothesis is:

H1: Ceteris paribus, with increasing labor market regulation, leverage (a) increases in widely-held firms and (b) decreases in firms with blockholders.

III. Data and Methodology

We examine the moderating role of ownership structure on the relationship between labor power and firm financial leverage. The research design used to test the ownership-related differential effects of shifts in labor power is a quasi-experimental design with treatment and control groups. We exploit changes in employment protection legislation (EPL) across OECD countries as a potentially exogenous source of variation in labor power, determining treatment assignment. Similar pre-post-intervention research design is widely applied for causal inference in labor economics (Angrist and Krueger (1999)). Also, recent finance research made extensive use of this setting when exploring the effect of policy-driven shifts in labor power on capital structure decisions of firms (e.g., Simintzi et al. (2015), Serfling (2016), Kuzmina (2018), Lin et al. (2018), Woods et al. (2019)).

A. Labor Power: Measure and the Source of Variation

Following Banker et al. (2013), Bennedsen et al. (2015), Simintzi et al. (2015) and others[4], we use the indicator of the strictness of EPL provided by the OECD, to capture exogenously triggered policy changes in employment protection and measure shifts in labor power. Since its launch in 1985, the OECD EPL index covers regulations on regular (open-ended) and temporary (fixed-term) contracts. Specifically, the EPL index reflects

[3] Ex ante, it is difficult to argue whether shareholders or managers make decisions in widely-held firms. Yet, previous literature suggests that labor negotiation outcome can be affected by the firm through raising debt, reducing cash or curbing executive compensation. Thus, managers may be also incentivized to dampen labor power by increasing leverage, see e.g. Huang et al. (2017).

[4] The indicator of the strictness of EPL by the OECD is widely used in the economic literature to operationalize shifts in labor power. In accounting and finance research, the information incorporated in the OECD EPL index is employed to examine firms' cost behavior (Banker et al. (2013)), financing choices (Simintzi et al. (2015)), and performance (Bennedsen et al. (2015)). Studies in the field of labor economics use the OECD EPL index to examine workers' labor market behavior (Gielen and Tatsiramos (2012)), capital-labor substitution, labor productivity (Cingano et al. (2010)), and job flow dynamics (Messina and Vallanti (2007), Millán et al. (2013)).

provisions protecting dismissal of regular workers (procedurial inconvenience, notice periods, severance payments, repercussions in case of unfair dismissal) and the regulation of temporary contracts (valid cases for use of fixed-term contracts, their renewal and duration) (OECD Employment Outlook (2013)). To benefit from longer time series, we use the EPL index, which is an average of the sub-indices referring to regular and temporary employment protection.[5] The aggregation of individual items into sub-indices and a composite EPL index follows the OECD weighting scheme illustrated in Figure 1. The summary index of EPL ranges from 0 to 6, where higher scores indicate stronger protection of employees vis-à-vis employers. The graduated coding approach allows to capture heterogeneity in employment protection provisions across OECD countries. Importantly, by construction, the EPL index allows for the analysis of intertemporal variation in EPL within a country.

[Figure 1 goes about here]

B. Leverage, Ownership Structure, and Controls

Our primary measure of financial leverage is the ratio of book debt – both short-term and long-term – to the book value of total assets (total book leverage denoted by LEV_T). Though, in untabulated tests, we show that baseline results hold across different operational definitions of leverage, such as market total leverage, market long-term leverage, book net leverage, and market net leverage. Our choice to primarily use book leverage is due to several reasons. First, according to a survey by Graham and Harvey (2001), managers rely heavily on book values when deciding about capital structure. Second, a closely related argument is that managers are able to adjust book leverage easier than market leverage. Book leverage relates to assets in place rather than firms' growth opportunities (Myers (1977)) and thus is not affected by stock-return induced equity value changes (Welch (2004)). The latter might be a concern for our analysis as there is evidence that capital market anticipates regulations strengthening labor power as negative news and, as a result, the market value of equity goes down (Hirsch (1991), Besley and Burgess (2004), Lee and Mas (2012), Petry (2018)). Due to the fact that the market value of equity in the denominator reflects share price fluctuations, it would be difficult to isolate the effect of legal changes on firms' use of debt only. Last but not least, Barclay et al. (2006) warn that the presence of the market value of equity in the denominator of market leverage and the nominator of other covariates, such as Tobin's *q*, might induce serious endogeneity issues.

[5] Starting from 1998, the EPL index also covers provisions for collective dismissals. As a robustness test, we use a broader definition of the EPL index covering provisions on collective dismissals. In this test, a similar – albeit slightly weaker – pattern is found, with significant differences between the estimated coefficients for the EPL main effect vs. its interaction with ownership concentration.

Similarly, to Heider and Ljungqvist (2015) and Simintzi et al. (2015), our alternative measure of leverage in the baseline analysis is the ratio of long-term debt to total assets (long-term book leverage denoted by LEV_{LT}), allowing us to focus on the fraction of debt that is most likely to react to changes in EPL, rather than e.g. working capital requirements. We require the two leverage measures to lie in the closed unit interval [0;1] (e.g., Lemmon et al. (2008)).

We operationalize firms' ownership structure (OWN) by Worldscope's 'closely held shares', item #08021, referring to shares held by insiders, including but not restricted to "shares held by officers, directors and their immediate families, shares held in trust, shares of the company held by any other corporation (except shares held in a fiduciary capacity by banks or other financial institutions), shares held by pension/benefit plans, and shares held by individuals who hold 5% or more of the outstanding shares" (Thomson Financial, 2007, Worldscope Database-Datatype Definitions Guide). As in the case of leverage, we require ownership concentration to lie in the closed unit interval [0;1]. In Section V, we employ alternative definitions of ownership concentration as a robustness check.

A set of firm-level controls includes common firm characteristics identified in the literature as the determinants of capital structure (see, e.g., Rajan and Zingales (1995), Frank and Goyal (2009), Lemmon et al. (2008), Öztekin (2015)). They are: SIZE as a proxy for diversification and a firm's default risk; TANGIBILITY as a measure of assets in place and the extent of adverse-selection costs; PROFITABILITY as a proxy for the availability of internal funds, and GROWTH (Tobin's *q*) as a control for growth opportunities. As suggested by Gormley and Matsa (2014), each specification includes industry-year dummies to mitigate possible confounding effects of unobserved time-varying industry shocks. Also, we allow for country-specific year trends to control for macroeconomic differences and ensure that the identification of the EPL effect comes from whether a change in EPL leads to deviations from pre-existing secular country-specific trends in leverage (Besley and Burgess (2004); Haw et al. (2018)). In Section V, we evaluate the robustness of our findings by including additional country-level controls. All firm-level variables are winsorized at the 1st and 99th percentiles to limit the influence of outliers.[6] Table A.1 in Appendix A provides a detailed overview of all variables and their definitions.

C. Empirical Methodology

Our empirical strategy relies on changes in EPL as quasi-experiments that allow to identify the causal effect of shifts in labor power on firms' financing choices. Most OECD

[6] Our results hold if the data are winsorized at the 0.50% level in both tails of the distribution.

economies changed their labor market regulation multiple times in recent years (OECD Employment Outlook (2013)), which provides us with the optimal setting to apply a difference-in-differences (DID) estimator. The identification strategy is built on the exogenous intertemporal variation in labor power generated by changes to employment protection regulations ("treatment"). The treatment group are firms incorporated in countries that are subject to a change in EPL in a country-specific year *τ*, while the control group are firms in countries that do not undergo a change in EPL in the same year.[7] A major advantage of our DID setting is that changes in EPL are "staggered" meaning that most firms are in both the treatment and the control group at different points in time. Stated differently, all firms domiciled in countries not subject to a change in EPL in year *τ* are in the control group, even if these countries have already experienced a change in EPL or will undergo this change later. The staggered structure of the data helps to mitigate concerns that treated and control firms have systematically different characteristics, which would be problematic in estimations using single cross-sectional and time-series differences (Roberts and Whited (2013)).

The validity of our empirical tests relies upon the central identifying assumption that, conditional on covariates, the average outcomes for treated and control firms would have followed parallel trends in the absence of an EPL change (Abadie (2005)). Given the parallel outcome dynamics prior to treatment and in the absence of possible confounding non-EPL-related events, the estimated DID parameter identifies the causal treatment effect of an EPL change on firm financial leverage. However, if country-level EPL changes are confounded by differential events or policies that affect firms' demand for debt, the parallel trend assumption would be invalidated. Therefore, we conduct several tests to mitigate concerns that treated and control firms may not share similar trends.

The following simple DID fixed-effects panel regression model may be used to analyze how labor power affects firm financial leverage:

$$\gamma_{it} = \alpha_0 + \beta \cdot EPL_{kt-1} + \theta^{/} \cdot X_{kit} + \eta_i + \alpha_j \cdot \tau_t + \varphi_{kt} + \varepsilon_{it}, \qquad (1)$$

where *i, t, j, k* index firms, years, industries, and countries, respectively. γ_{it} denotes financial leverage of firm *i* at time *t*; α_0 is an intercept to allow for a general trend in firms' demand for debt over time, $EPL_{k,t-1}$ is the EPL index, lagged by one year to capture a gap between the passage of the law and its implementation; X_{kit} is the vector of controls which

[7] The fact that Thomson Reuters does not deliver data on a firm's historical domiciles might distort the assignment of a firm to either the treatment or the control group. This would bias the DID estimate of the EPL effect towards zero, e.g. increase the probability of not rejecting a false null (e.g., Heider and Ljungqvist (2015), Woods et al. (2019)). In Section V, we address this concern and separately analyse firms with zero foreign assets.

are established leverage detrminants; η_i denotes firm fixed effects included to avoid confounding by unobserved time-invariant firm characteristics (e.g., Cingano et al. (2010), Matsa (2010)); $\alpha_j \cdot \tau_t$ are 12 Fama-French industry-year fixed effects for industry *j* at time *t*; φ_{kt} denotes country specific year trends; and ε_{it} is the error term. The parameter β represents the estimate of the within-firm before-after change in leverage of firms in countries experiencing a change in EPL versus the within-firm before-after change in leverage of their industry peers in countries not subject to an EPL change in year *t-1*.[8]

Yet, model (1) would identify an average treatment effect of a change in EPL on financial leverage. If firms' responses to treatment vary depending on ownership concentration, the static DID model (1) should be extended to a triple-diff ("difference-in-difference-in-differences", DDD) model allowing to analyze the ownership-related differential effects of a shift in labor power on financial leverage before and after an EPL change, which takes the following form:

$$\gamma_{it} = \alpha_0 + \beta \cdot EPL_{kt-1} + \delta \cdot (EPL_{kt-1} \times OWN_{it}) + \vartheta \cdot OWN_{it} + \theta^{/} \cdot X_{kit} + \eta_i + \alpha_j \cdot \tau_t + \varphi_{kt} + \varepsilon_{it}, \qquad (2)$$

which includes the interaction between EPL and OWN and the base effect of OWN. The strategic use of debt perspective of *H1a* predicts that widely-held firms in affected countries increase their demand for debt relative to firms in unaffected countries following an increase in EPL and, thus, β is expected to be positive (β>0). The parameter δ estimates the differential effect of a change in EPL on financial leverage conditional on ownership concentration. The financial flexibility perspective of *H1b* predicts that firms with concentrated ownership in affected countries react to an increase in EPL with a more conservative financial policy and, thus, δ is expected to be negative (δ<0). A significant coefficient on the interaction term would indicate that risk considerations of undiversified blockholders might play a role in a firm's capital structure choice.

However, the identification strategy based on a static DDD model does not reveal a bias due to pretreatment trends and reversals (see e.g. Haw et al. (2018), Heider and Ljungqvist (2015); Serfling (2016), Woods et al. (2019)). *First*, a static DDD model does not explicitly address concerns that treatment and control groups may not share similar trends in leverage levels prior to an EPL change, whereby in case of any differences in trends, the key identifying assumption would be violated. If some unobserved factors drive both changes in EPL and firm capital structure choice, one might find evidence of reverse

[8] We assess the representativeness of our sample compared to previous studies and verify whether or not our findings are data-driven by estimating model (1). Similar, to Simintzi et al. we find an indication for the negative association between leverage and EPL. Results are available from the authors upon request.

causality, i.e. leverage adjustments before changes in EPL. *Second*, a static DDD model does not allow to track delayed reactions.

Yet, the time-varying nature of the EPL index enables us to employ a dynamic framework by including lags and leads and, thus, address concerns of pre-trends and reversals. Specifically, we narrow the window around an EPL change and retain all observations for treated and control firms within the time window beginning two years before a change in EPL and ending two years after a change in EPL (τ=-2, τ=-1, τ=0, τ=+1, τ=+2). Our choice of the five-year window follows Serfling (2016), Simintzi et al. (2015) and Haw et al. (2018). Narrowing the time window aims to address concerns that our results might be due to non-EPL-related events affecting firms' capital structure choices. As suggested by Faccio and Xu (2018), the advantage of this approach is that it does not require us to compile a list of all potentially confounding events, which would otherwise be a challenging task. Also, to further ensure credibility of the dynamic model, we disregard overlapping EPL changes, i.e. cases with more than one EPL change within a specified five-year window.

As recommended by Bertrand et al. (2005), we collapse the time series information on EPL into two effective periods–"before" and "after". For each of countries, we operationalize a shift in labor power, ΔEPL, by the change in the EPL index in the five-year window around the year τ of an EPL change in country k. We include current ΔEPL (ΔEPL(τ=0)), one-year and two-year lagged values of ΔEPL and one-year and two-year forward values of ΔEPL.[9] Our baseline dynamic DID model is specified as follows:

$$\gamma_{i\tau} = \alpha_0 + \sum_{m=-2}^{+2} \beta_{\tau-m} \cdot \Delta EPL_k \cdot Year_{\tau-m} + \theta' \cdot X_{i\tau} + \eta_i + \alpha_j \cdot \tau_\tau + \varphi_{k\tau} + \varepsilon_{i\tau}, \quad (3)$$

where *i, j, k* index firms, industries, and countries, respectively; (τ-m) corresponds a year in a five-year window, in which *τ=0* is the year of an EPL change; $\gamma_{i\tau}$ is financial leverage of firm *i* in year (τ-m); ΔEPL is the magnitude of an EPL change, which is kept constant over a five-year time window; *Year* denotes a set of dummies taking a value of one for the respective year from (τ=-2) to (τ=+2), and zero otherwise; X_{kit-1} is the vector of time-variant controls; η_i denotes unobserved firm-specific effects; $\alpha_j \cdot \tau_t$ are industry-year fixed effects; φ_{kt} denotes country specific year trends, and ε_{it} is the error term. The parameter β represents the difference between mean leverage of firms in countries changing EPL and firms operating in the same industry but located in countries not changing EPL in a given year relative to the base case (τ=-2). Significant coefficients on ΔEPL lags would

[9] In unreported tests, we address concerns regarding a level-dependent EPL change by regressing ΔEPL on the country's initial EPL level. The coefficient obtained for the EPL level is small (β=-0.09) and not statistically significant (p-value=0.312). Also, R-squared of 0.054 indicates that the initial EPL level explains only 5.4% variation in the EPL change.

suggest evidence of a spurious analysis due to a pretreatment difference in leverage levels and/or reversals. Significant estimates for ΔEPL leads would provide evidence for the effect of a change in EPL on leverage and allow us to infer about the presence of a gradual or delayed adjustment in the firms' demand for debt (Heider and Ljungqvist (2015)).

An extension of model (3)–which is our main model used throughout the rest of the paper–allows us to explore the moderating role of ownership structure in the labor-leverage nexus in a dynamic setting is a DDD model of the form:

$$\gamma_{i\tau} = \alpha_0 + \sum_{m=-2}^{+2} \beta_{\tau-m} \cdot \Delta EPL_k \cdot Year_{\tau-m} + \sum_{m=-2}^{+2} \delta_{\tau-m} \cdot (\Delta EPL_k \times \emptyset OWN_i) \cdot Year_{\tau-m} + \sum_{m=-2}^{+2} \vartheta_{\tau-m} \cdot \emptyset OWN_i \cdot Year_{\tau-m} + \theta^{/} \cdot X_{i\tau} + \eta_i + \alpha_j \cdot \tau_\tau + \varphi_{k\tau} + \varepsilon_{i\tau}, \quad (4)$$

in which ØOWN denotes mean ownership concentration prior to an EPL change (OWN(Ø(τ = -2), (τ = -1)), fixed over a five-year time window to ensure that the differential effect of EPL comes from the variation in EPL rather than the variation in OWN. The parameter δ estimates the ownership-related differential effect of an EPL change on the difference in average leverage ratios of firms in the treatment and control group in a given year relative to the year τ=-2. Throughout the paper, empirical models are estimated with standard errors that are heteroscedasticity-consistent and, since EPL varies at the country level, clustered by country to allow for possible within-country correlation of residuals.

D. Sample Construction

To run our baseline regression analysis, we collect and aggregate data on country-specific EPL changes from *the OECD-IDB Database* and data on financial leverage, ownership structure and other firm-specific characteristics from *Datastream/Worldscope*.

Our initial country-level sample consists of all OECD economies, conditional on the availability of the EPL index. Our initial firm-level sample consists of all – active and inactive – listed firms from OECD countries, which are covered in *Datastream/Worldscope*. Our sample period begins in 1994, the first year *Datastream/Worldscope* provides comprehensive data on firms' ownership structure, and ends in 2013, the last year for which the EPL index is available.

In the *country-level* sample, we focus on changes in EPL that allow building "clean" five-year windows. Technically, every episode of an EPL change must allow for four years without interfering EPL changes before year τ and at least two years without interfering EPL changes after year τ. Table 1 illustrates the identification of relevant change episodes.

Countries serving as a control group are those that do not undergo any EPL change over the same time window. The composition of the control group varies from episode to episode. After this restriction, we are left with 21 episodes of an EPL change and 28 OECD countries.[10]

[Table 1 goes about here]

Following the standard approach, we restrict the *firm-level* sample to (1) stocks of type 'equity', (2) primary listings, (3) companies located/securities listed in the domestic country. We exclude firms from financial and utility sectors (Standard Industrial Classification (SIC) codes 6000-6999 and 4900-4999, respectively) as their capital structure decisions can be constrained by regulatory supervision. We drop firm-years with missing, negative or zero total assets and shareholders' equity, missing total debt and ownership data.

The next step after data cleaning is to identify relevant firm-year observations in the firm-level sample. For each relevant episode of an EPL change, we create a cohort that consists of firms in countries experiencing a change in EPL in year τ (τ=0) and all other firms in countries that are not subject to a change in EPL. Apart from observations from year τ, each cohort consists of observations from two years before and two years after a change in EPL. This means, each cohort covers a five-year time window, in which treated firms are those in countries undergoing a change in EPL in year τ=0 over the five-year time window and control firms are those in countries not undergoing a change in EPL over the whole time window. In the last step, we pool all cohorts together. The final sample is an unbalanced panel that consists of maximum of 58,141 firm-years (11,306 non-financial, non-utility firms) from 28 OECD countries over the 1994-2013 period.

Table 2 reports the distribution of EPL changes, firms, and observations. Our sample contains 5 countries with two EPL changes, 11 countries with just one EPL change, and 12 countries, in which relevant change episodes could not been identified, out of which 6 countries did not experience an EPL change over the sample period. The strictness of EPL increases in 7 countries (Australia, Denmark, France, Hungary, New Zealand, Norway, United Kingdom) and decreases in 11 countries (Australia, Austria, Belgium, France, Greece, Japan, Netherlands, Portugal, Spain, Sweden, Turkey). Average magnitude of an EPL change is 0.24 (with a standard deviation of 0.30).

[Table 2 goes about here]

[10] Countries included are: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, France, Greece, Hungary, Ireland, Israel, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

Table 3 provides summary statistics. Means, medians, and standard deviations of our key variables are consistent with the values reported in Simintzi et al. (2015). Book (long-term) leverage of the average firm is 20.7% (13.2%). Average pretreatment ownership concentration of our sample firms is 39.8%. The average sample firm has 1,386 million USD in total assets, 28.8% of which are tangible, trades at a market-to-book ratio of 2.2 and has ROA of -1.1%.

[Table 3 goes about here]

Figure 2 plots the within-firm variation in LEV_T as a function of changes in EPL over the five-year time window (τ=-2, …, τ=+2), considering widely- and closely-held firms. The sub-sample of widely-held (closely-held) firms consists of firms with blockholder ownership of approximately 0% (100%). LEV_T values are calculated separately for treated and control firms. Each dot represents the demeaned average leverage, net of firm-specific characteristics, time-varying industry conditions, and country-specific time trends in the respective year. In a sub-sample of firms with highly diffuse (concentrated) ownership structures, the treated firms show a significant increase (decrease) in leverage after an increase in EPL. In both scenarios, no change happens to control firms. Overall, Figure 2 provides the descriptive support for H1a and H1b.

[Figure 2 goes about here]

IV. Main Results

Table 4 presents regression results. Columns I.1 and I.2 report results using total book leverage (LEV_T) as the dependent variable in model (3) and (4), respectively, and columns II.1 and II.2 report results using long-term book leverage (LEV_{LT}). We start by estimating the average effect of an EPL change on financial leverage of the firms. The coefficients of ΔEPL in column I.1 are small in magnitude and statistically not significant. From this result alone, two explanations can be possible: either EPL per se does not matter for corporate financial policy or there are two countervailing effects that offset each other. These offsetting effects are: a "strategic use of debt effect" where the desire to prevent rent extraction will encourage firms with diffuse ownership structure to increase financial leverage and a "financial flexibility effect", where increasing indebtedness would increase the costs of financial distress, and thus, firms with concentrated ownership structure will maintain leverage levels to minimize insolvency risk.

Next, we estimate the ownership-related differential effects of an EPL change. Hypothesis *H1a* posits that the estimates of ΔEPL relative to the base case (τ=-2) are *positive*

for each year following the treatment in τ=0, while hypothesis *H1b* posits that the estimates of ΔEPL#ØOWN are *negative* for each year following τ=0. The results are reported in column I.2. Our findings suggest that there are no pre-trends or reverse causality. ΔEPL(τ=-1) and ΔEPL#ØOWN(τ=-1) as well as ΔEPL(τ=0) and ΔEPL#ØOWN(τ=0) are small and insignificant implying that firms start off on parallel trends and supporting credibility of our DDD design. Also, these findings suggest that treated firms do not anticipate changes in EPL in advance and do not adjust leverage before they have to bear the costs of a shift in labor power, perhaps due to the tax shield-related considerations (Heider and Ljungqvist (2015)). On the opposite, after the treatment, the estimated coefficients on ΔEPL and ΔEPL#ØOWN are sizeable, statistically significant and have their expected signs. Moreover, we find that an EPL change exerts a lasting effect on financial leverage in both widely and closely held firms. Whereas firms with diffuse ownership structure uniformly *increase* their demand for debt following an increase in EPL, firms with concentrated ownership structure display a more conservative debt policy.

We evaluate economic significance based on the coefficient estimates in column I.2 of Table 4 and summary statistics in Table 2. As shown in column I.2, when considering widely held firms, a one standard deviation increase in the EPL index is associated with an *increase* in average incremental total book leverage by 408 basis points (0.30x0.136) or 20% of its mean in year (τ=+1) relative to the base year and 432 basis points (0.30x0.144) in year (τ=+2). This corresponds to an *increase* in mean leverage by 246 basis points (0.30x[0.136-0.054]) or 12% of its mean in year (τ=+1) relative to the year of an EPL change and 270 basis points (0.30x[0.144-0.054]) in year (τ=+2). Considering firms with cumulative blockholdings of 100%, a one standard deviation increase in the EPL index is associated with a *decrease* in average incremental leverage by 111 basis points (0.30x[-0.173+0.136]) or 5% of its mean in year (τ=+1) relative to base and 162 basis points (0.30x[-0.198+0.144]) in year (τ=+2), which is equivalent to the adjustment in mean leverage relative to year (τ=0).

For a firm with ØOWN that is one standard deviation above the sample mean (0.63=0.40+0.23), a one standard deviation increase in the EPL index is associated with 70 basis points (0.30x[-0.173+0.136]x0.63) lower total leverage in the year following an EPL change. For comparison, a firm with ownership concentration at the level of the U.S. sample mean (0.29), a one standard deviation increase in the EPL index is associated with only 32 basis points lower leverage (or a decrease by 1.56% of its mean). Since U.S. firms have on average less concentrated ownership structures compared to European firms (La Porta et al., 1999), these findings may explain the puzzle why U.S.-based studies typically provide evidence in favor of the strategic use of debt view (e.g. Dasgupta and Sengupta (1993), Matsa (2010), Meyers and Saretto (2010), Benmelecj et al. (2012)) and non-US-

based studies support the financial flexibility view (Caggese and Cuñat (2008), Simintzi et al. (2015), Kuzmina (2018)).

Taking into account the cross-country heterogeneity in EPL, we evaluate the partial derivative of LEV_T along the distribution of EPL. An increase in the EPL index from the first to the third quartile by 0.18 leads to an increase in LEV_T by 245 basis points relative to base in year (τ=+1) in firms with no blockholders, but to a reduction in LEV_T by 67 basis points in firms with fully concentrated ownership structure (equal to the difference of 312 basis points). The results show that the role of ownership structure in the labor-leverage nexus is economically significant.

The coefficients on all firm-level controls are statistically and economically significant, and have signs predicted by finance literature, suggesting that the effect of a shift in labor power on leverage is not driven by the correlation between EPL and these controls. Furthermore, since each specification allows countries to have different trends in leverage, the estimates of ΔEPL and ΔEPL#ØOWN measure the effect of a shift in labor power on firm financial leverage that is distinct from any country-specific trend that could coincide with an EPL change.

In columns II.1 and II.2, we re-estimate our baseline models using long-term book leverage as the dependent variable. The results are quantitatively and qualitatively consistent. Overall, findings in Table 4 support the hypothesized moderating effect of ownership structure and imply that accounting for ownership structure could help reconcile the strategic use of debt and financial flexibility view on the labor-leverage nexus.

[Table 4 goes about here]

V. Robustness

A. Pretreatment Differences

Table 4 presents results of the regressions comparing the difference in leverage after and before an EPL change for firms in countries that underwent a change in EPL (the treatment group) to the same difference for firms in unaffected countries (the control group). The coefficients on ΔEPL and ΔEPL#ØOWN are statistically significant and have their expected signs in all years after treatment, providing the first evidence that our analysis is not spurious. Yet, there may be a concern that the treatment and control groups may differ systematically prior to an EPL change and, thus, the observed differences in leverage can reflect inherent (unmeasured) pretreatment differences rather than treatment effect. To

address this concern, we perform several matched sample tests. We match firms according to their geographical location and by using propensity score methodology.

Perhaps one would argue that geographic distance embodies differences in socioeconomic, regulatory, administrative, and cultural institutions (Boschma and Frenken (2006)) that might explain variation in leverage. Moreover, if local economic conditions spill across neighboring countries' borders, firms in treated countries and firms in neighboring control countries will spuriously appear to react to EPL changes. To assuage these concerns, we construct a matched sample by matching treated countries to control countries that are the nearest geographic neighbors. To this end, we calculate geographic distances (in kilometers) for all pairs of country's capital cities and, for each country affected by an EPL change in year (τ=0), identify closest unaffected neighbor countries. In column I.1 of Table 5, we estimate the ownership-related differential effect of an EPL change on LEV_T–as specified by model (4)–for the matched sample in which each treated country is matched with only one (nearest) neighbor. The results substantiate our previous findings by showing a significant increase (decrease) in financial leverage for widely-held (closely-held) treated firms relative to control firms after an EPL change. These results also hold when considering two closest neighbor countries as displayed in column I.2.

To address the concern that treated and control firms may start off with different characteristics, we create matched samples using the propensity score methodology (without replacement). Column I.3 reports the ownership-related differential effects based on propensity score matching by conditioning on pretreatment ownership structure and industry affiliation and using the nearest neighbor. One concern about the nearest neighbor matching is that the closest neighbor might be far away. To address this concern, in column I.4, treated firms are matched to their nearest neighbors in terms of ownership structure and industry within a caliper distance of 0.01 (e.g. Simintzi et al. (2015)). In column I.5, we match each treated firm to its nearest neighbor using the multivariate score methodology. Specifically, we run cross-sectional probit regressions for each year and estimate the probability of being treated as a function of pretreatment ownership concentration, industry, size, tangibility, profitability, and growth. For each firm-year, we compute a propensity score as the predicted probability of being treated and use them to select control firms.[11] Our results are qualitatively and quantitatively similar to main findings across all specifications and when using LEV_{LT} as the dependent variable (column II.1 to II.5). This suggests that our findings seem not to be driven by unobserved pretreatment differences.

[11] By extending the list of relevant matching characteristics, we do not set a calliper distance due to two issues related to *the curse of dimensionality*. First, we obtain fewer matched pairs due to the lower number of good matches for the treated firms. Second, the cross-country distribution of control firms becomes biased since most of the control firms now come from selected countries.

[Table 5 goes about here]

B. Endogeneity of EPL

By narrowing the time window around an EPL change, accounting for country-specific year trends and constructing different matched samples, we aim to deal with the concern that the observed treatment effect is not due to variation in EPL, but rather due to potential non-EPL related confounds. To further examine this possibility, we proceed in four steps. *First*, we explore the political economy of EPL. *Second*, we quantify the unsystematic component of EPL and substitute it for the original EPL values. *Third*, we extend baseline models by including additional country-level characteristics as controls. *Fourth*, we check our results for validity using alternative sample definitions.

1. Political Economy of EPL

Political economy considerations may be a potential threat to the internal validity of causal inference (Meyer (1995)). In a recent study, Karpoff and Wittry (2018) show that the institutional and political-economy context plays an important role for the specification and interpretation of empirical tests that use legal changes as quasi-natural experiments. The concern about the endogeneity of employment regulations should be less severe because, as shown in previous studies, they are unlikely to be directly affected by the decisions of individual firms, but rather are determined by exogenous factors such as legal origin, economic development, employees' bargaining power, election rules, and concentration of financial wealth (Botero et al. (2004), Pagano and Wolpin (2005), Perotti and Von Thadden (2006), Saint-Paul (2002)). Yet, to ensure reliability and internal validity of our analysis, we account for the possibly endogenous adaptation of the EPL changes.

In our case there might be concern that both country-level changes in employment regulations and firm-level leverage adjustments may be a response to unobserved changes in labor market or local economic and political conditions. Thus, we start by analyzing factors that may determine EPL changes in our initial country-level sample. To do this, we estimate a fixed-effect panel regression model of the form:

$$EPL_{kt} = \alpha_0 + \theta' \cdot X_{kt-1} + \eta_k (+\tau_t) + \varepsilon_{kt}, \qquad (5)$$

where *k, t* are subscripts for countries and years, respectively. EPL_{kt} denotes the EPL index of country *k* at year *t*; α_0 is an intercept capturing a general trend in EPL; X_{kt-1} is the vector of time-variant country-level variables measured as of year *t-1* relative to an EPL change and centered on their means (except indicator variables); η_k denotes unobservable time-invariant country-specific effects; τ_t indicates year dummies capturing the effect of

changing macroeconomic conditions; and ε_{it} is the error term. Standard errors are robust to heteroscedasticity and clustered at the country level.

In Table 6 we gradually consider several groups of potential confounds and start from concurrent changes in labor market conditions. Prior studies suggest that firms' demand for debt depends on union bargaining power and the threat of unionization (Bronars and Deere (1991), Cronqvist et al. (2009), Matsa (2010), Woods et al. (2019)). Thus, if shifts in union power systematically coincide with EPL changes, unionization may drive our results. Therefore, in column 1 we include the unionization rate, its one-year change, and an indicator of bargaining centralization as potential determinants of EPL changes. We find that a change in the union coverage is significantly positively associated with the EPL level.

[Table 6 goes about here]

Next, we address concern that EPL changes may coincide with local business cycle variation. Arguably, the dynamics of the output growth may determine not only firm debt capacity (Barges (1968)), but also the political support for employment protection legislation since more rigid labor markets are likely to be important during economic downturns (Saint-Paul (1992)). To provide the first descriptive evidence, Figure 3 graphically tests whether GDP growth and the EPL level develop in similar patterns over a sample period, but does not give a clear indication of the concomitant development.

[Figure 3 goes about here]

In column 2 of Table 6 we add GDP growth as a covariate and in column 3 additionally include the crisis indicator borrowed from Laeven and Valencia (2012). We find a positive association between economic growth and the EPL level. However, the significance of this relationship weakens once the effect of crises is controlled. As expected, we find a strong negative association between crises and the EPL level.

In the following, we tackle the issue that our findings might be driven by variation in taxes. Recent studies by Faccio and Xu (2015, 2018) and Heider and Ljungqvist (2015) emphasize a significant role of taxes in explaining firms' capital structure choices. In column 4 we control for changes in country-specific corporate and personal income tax rates–the components of the Miller tax index–and add an indicator for major corporate income tax reforms, which might coincide with EPL changes. The results show that the EPL level does not appear to correlate with tax changes.

A further concern regarding the accuracy of drawing causal inferences about the effect of EPL is that a country's political and socioeconomic conditions might simultaneously

determine firm financing choices and EPL. Hutton et al. (2014) find that managerial political preferences help explain firm leverage policies, whereby CEOs with conservative personal ideologies choose lower levels of corporate debt. Consistent with the political power theory, Botero et al. (2004) and Pagano and Volpin (2005) demonstrate that countries with leftist governments have more stringent regulation of labor. Column 5 includes an indicator of the political leaning of the government developed by Cruz et al. (2016). In line with the political theory, we find that the leftist orientation of governments is positively associated with stronger EPL albeit is statistically insignificant. In column 6, we address concern that wealth distribution might be responsible for our results by adding the Gini coefficient of income inequality. The results show no relation between the EPL level and Gini index.

After controlling for year fixed effects in column 7, we document that the change in the union coverage is of first-order importance to explain the variation in the level of EPL, even though the magnitude of this relationship is rather low. The effect of the unionization level is weaker and has an even smaller magnitude, while its negative correlation with ΔEPL is in line with Simintzi et al. (2015).

2. Estimating the Unsystematic Component of EPL

Since EPL is measured at the country level, one of the major concerns with our analysis is that non-EPL-related unobserved changes are responsible for our results. Next, we address the concern regarding the endogeneity of EPL by disentangling between the *systematic* EPL component, which is perfectly correlated with other macroeconomic factors, and its *unsystematic* (or *residual*) counterpart. Residual EPL is expected to be independent of the potential confounders and regarded as EPL characteristics, which are unobserved to the econometrician but considered in the firm capital structure choice. We assume that residual EPL captures unsystematic changes in employment protection and allow it to vary over time. To circumvent the problem of sampling error, we use the initial aggregate country-level sample. The systematic and unsystematic variance EPL components are derived from model (5) of the political economy analysis, in which year-to-year EPL changes are regressed against variables reflecting the institutional, political, and socioeconomic context (column 7 of Table 6). The following regression represents our model:

$$EPL_{kt} = \alpha_0 + \beta_1 \cdot UNION_{kt-1} + \beta_2 \cdot BARG\_CENTR_{kt-1} + \beta_3 \cdot \Delta UNION_{kt-1} + \beta_4 \cdot GDP\_GROWTH_{kt-1} + \beta_5 \cdot CRISIS_{kt-1} + \beta_6 \cdot CIT_{kt-1} + \beta_7 \cdot PIT_{kt-1} + \beta_8 \cdot TAX\_REF_{kt-1} + \beta_9 \cdot POL_{kt-1} + \beta_{10} \cdot GINI_{kt-1} + \eta_k + \tau_t + \varepsilon_{kt} \quad (6)$$

where *k*, *t* are subscripts for countries and years, respectively. EPL_{kt} denotes the EPL index of country *k* at year *t*; α_0 captures a general trend in EPL; covariates include lagged

values of unionization level and change, bargaining centralization, GDP growth, a crisis indicator, corporate and personal income tax rates, an indicator for major corporate income tax reforms, political leaning, and wealth distribution; η_k denotes unobservable country-specific effects; τ_t indicates year dummies; and ε_{it} is the error term. The regression residual serves as a proxy for unexplained variance (residual EPL) or the fraction of variance in EPL, which is not explained by changes in the above covariates. Residual EPL in our sample has the standard deviation of 0.935 suggesting that EPL is exposed to high levels of unexplained variance.

To benefit from higher within-variation in residual EPL, we switch from the dynamic to the static DDD and further estimate model (2) using residual EPL instead of the original EPL values. Table 7 reports the results of these analyses. Column I.1 suggests that residual EPL is a significant factor explaining the variation in financial leverage, while firm ownership structure is an important moderator of the EPL effect. Consistent with the findings from the dynamic framework, results in Table 7 reconcile two competing views on the labor-leverage nexus. Widely-held firms seem to increase financial leverage in response to an increase in EPL, while closely-held firms react with a more conservative financing policy.

[Table 7 goes about here]

Building upon the evidence on the international spillover of labor market reforms (Dao (2008)), a country's decision to change EPL could be affected by former EPL changes in neighboring countries. Assuming that local economic conditions spill across country borders, we should observe that firms in both treated and untreated neighbouring countries will spuriously appear to react to EPL changes in a similar way. In columns I.2 to I.3, we perform a falsification test as suggested by Heider and Ljungqvist (2015). Therefore, we extend model (2) by including the lagged (average) EPL level of one (two) nearest neighbour countries and its interaction with the ownership measure. While we still find that widely-held (closely-held) firms in treated countries response to an increase in EPL by increasing (reducing) leverage, we also find that firms located in the closest untreated neighbouring countries behave in a different way. In line with Heider and Ljungqvist (2015), we interpret our findings as follows: when a country strengthens its employment protection regulations, widely-held (closely-held) firms in the closest untreated neighbour countries actually *decrease* (*increase)* their leverage compared to their industry peers in more distant countries. Since this result appears to be inconsistent with the argument of non-EPL-induced reactions to confounding changes in local conditions, we consider it as a support for a causal interpretation of the EPL-induced treatment effect. Our results are

qualitatively and quantitatively similar to main findings across all specifications and when using LEV_{LT} as the dependent variable (columns II.1-II.3).[12]

3. Potential Confounds

In Table 8, we address potential omitted variable bias by including a set of relevant omitted country-level covariates into the specifications for estimating model (4). We start with variables suggested as being the most reliable macro-determinants of leverage (e.g., Frank and Goyal (2009), Öztekin (2015)), gradually add variables from the political economy analysis of EPL, and finally control for country-level median leverage.

[Table 8 goes about here]

Taking into account empirical evidence suggesting that creditor protection has a negative effect on the level of debt financing (e.g., Cho et al. (2014)), throughout the table, we allow for country-specific year trends compiled by classifying countries into groups based on their (time-invariant) creditor rights index developed by Djankov et al. (2007). In column 1, we additionally include expected inflation as a control variable to account for inflation-induced gains to firms from the reduction in the real value of outstanding debt (Taggart (1985)). In line with the trade-off theory, we find that leverage is positively (although weakly) associated with inflation. In column 2, we control for log of GDP per capita to capture general economic development as well as GDP growth to account for the effect of business cycles. We find that firms' demand for debt is strongly positively correlated with the level of an economy's development and strongly negatively correlated with economic growth. In columns 3 and 4, we add a crisis indicator and tax measures, respectively. For these variables, the only significant effect is that of the personal income tax, although it is of negligible magnitude. In column 5, we add the change in the unionization rate that is found to be the first-order determinant of an EPL change. The effect of ΔUNION on leverage is statistically insignificant. Finally, in column 6 we add the remaining variables from the political economy analysis and a country-level financial leverage–measured as the assets-based weighted average book leverage per country-year. For these variables, the only significant effect is that of unionization; as expected, it is positive, although has a small magnitude. Consistent with the view of the persistent differences in debt ratios across countries (Booth et al. (2001)), country-level average debt ratio is strongly positively associated with firm financial leverage, and the magnitude of the coefficient is high.

[12] For space reasons, from now on we report models in which the dependent variable is LEV_T. Our results are robust to using LEV_{LT} as the dependent variable and are available upon request.

Nevertheless, including additional control variables does not substantially change the magnitudes of the coefficients of interest. In line with our main findings, in the subset of widely-held firms, we observe a positive relation between labor power and financial leverage, which is supportive of the strategic use of debt view. In the subset of closely-held firms, we find a substitution effect, consistent with the financial flexibility view. Overall, findings in Table 8 suggest that our results are not due to any non-EPL-related source of unobserved variation that coincides with the EPL changes.

4. Sample Composition Concerns

Yet, there still remain concerns that the estimation of the EPL effect may be distorted by several sample composition issues. In Table 9 we address these concerns by adjusting the sample definition. To start with, we account for the fact that the global financial crisis represents a severe structural shock to financial leverage, employment protection, and economic rents generated by firms (e.g., Haw et al. (2018), Simintzi et al. (2015)). To this end, in column 1, we exclude years 2008-2009 from the sample period. The results indicate that some firms adjust their financing policies already in the year of an EPL change ($\tau=0$). The magnitude of coefficients on ΔEPL and ΔEPL#ØOWN for year ($\tau=1$) is higher than that reported in Table 4, evidencing a more profound ownership-related differential effect of labor power following a change in EPL, which also fades more rapidly thereafter.

[Table 9 goes about here]

Building upon findings in column 1, we further address a concern that countries with the large number of observations drive our results. As illustrated in Table 2, firms that account for the largest fraction of the control sample are domiciled in the US (41.97%) and Canada (3.98%), whereas firms headquartered in Japan (21.21%) and the UK (10.10%) account for the largest fraction of the treatment sample. Thus, in the next step, we estimate model (4), controlling for CRISIS and gradually excluding overrepresented countries, i.e. the US and Canada (in column 2), the US, Canada and Japan (in column 3), the US, Canada, Japan, and the UK (in column 4). The ownership-related differential effect of EPL remains largely unchanged in qualitative and quantitative terms compared to the baseline findings.

The remaining important concern relates to firms changing headquarter location over the sample period. The *Datastream/Worldscope* database provides information on the current headquarter location only, and thus, we cannot fully account for the possibility that a firm has not been domiciled in a particular country at time of treatment. Since the treat-

ment–a change in EPL–is country-specific, this limitation would lead to an imperfect assignment of firms to the treated and control groups (e.g., Heider and Ljungqvist (2015), Woods et al. (2019)). To remedy this concern, we restrict our sample to firms having no overseas assets over a particular five-year window[13], and furthermore, exclude US firms that constitute some 57% of the restricted sample. Column 5 of Table 9 provides results of estimating model (4) based on the sample of non-US firms with zero foreign assets. Our findings are consistent with main results. When considering widely held firms, a one standard deviation increase in the EPL index is associated with an *increase* in mean incremental total book leverage by 121 basis points (0.10x0.121) or 6% of its mean in year (τ=+1) relative to the base year and 130 basis points (0.10x0.130) in year (τ=+2). Considering firms with cumulative blockholdings of 100%, a one standard deviation increase in the EPL index is associated with a *decrease* in average incremental leverage by 70 basis points (0.10x[-0.191+0.121]) or 3% of its mean in year (τ=+1) relative to base and 120 basis points (0.10x[-0.250+0.130]) in year (τ=+2). Overall, evidence in Table 9 enhance our confidence that findings on the ownership-related differential EPL effects are not spurious.

C. Endogeneity and Alternative Definitions of Ownership Structure

1. Endogeneity of Ownership Structure

So far, our analyses provide statistically and economically significant evidence reconciling the positive and negative roles of strengthening labor power on financial leverage. Until now, we rely on the assumption of ownership exogeneity, and the remaining concern is that our estimates may be biased if firm ownership structure is endogenously determined by firms' contracting environment (Demsetz and Lehn (1985), Himmelberg et al. (1999)). This issue is partly mitigated by applying the within estimator that allow us to control for time-invariant unobserved firm characteristics and using pre-treatment ownership data in all DDD estimations. However, our empirical design does not account for the fact that the choice of concentrated ownership structure may be partially determined by a country's EPL as well as the potential reverse causality issue between controlling ownership and financial leverage. Through the lens of agency theory, the latter may arise because it is not clear whether concentrated ownership reduces firms' demand for debt, or whether the limited use of debt prevents blockholders from selling their stakes to keep control over the firm.

Since endogeneity issues could potentially drastically alter the sign, magnitude and statistical significance of estimated coefficients, we apply several approaches to test whether our main results hold after accounting for potential endogeneity concerns. Table

[13] Due to the poor availability of data on foreign assets, we classify a firm as having no overseas assets if it discloses zero foreign assets in at least three out of five years in a particular time window.

10 reports the results of these tests. One approach to address the bias is to take first appearance data, e.g. substitute original firm ownership concentration data from model (4) by the values from the year of a firm's first appearance in the sample. Consistent with our prior findings, column 1 of Table 10 indicates that an increase in EPL is associated with an increase in financial leverage in the subset of widely-held firms and a relatively more conservative response in closely-held firms. The magnitude of the coefficients on ΔEPL and ΔEPL#ØOWN is higher, while the effect remains statistically significant at the 5% level.

A more conservative approach is to employ the instrumental variables method and estimate a modified two-stage least squares (2SLS) regression in which original, potentially endogenous ownership data are instrumented by exogenous variables (e.g., Bennedsen et al. (2015)). To find instruments, we follow the finance literature and select factors that have been considered to be good predictors of firm ownership structure. Following Klasa (2007) documenting that many founders sell their controlling stakes over time due to high risk-bearing costs, complexity-induced inefficiencies, and succession issues, we use firm age (AGE) as a firm-level factor of ownership concentration. To account for the substantial cross-country heterogeneity of listed firms' ownership structures (La Porta et al. (1999)), we additionally consider country-level variables characterizing the economic, cultural and legal context that affect financial markets' development. Following Ang and Kumar (2014) and Holderness (2017), our macro-level instruments for ownership are: the wealth of a country operationalized by log per capita GDP (LOG(GDP)), religion measured by the fraction of Catholics (RELIGION), risk tolerance measured by Hofstede's uncertainty avoidance index (RISK), genetic distance to the United States (DISTANCE), the strength of shareholder rights' protection measured by the anti-director rights index (ADRI as compiled by Djankov et al. (2008)), and the strictness of regulation mandating disclosure (DISCLOSURE as compiled by La Porta et al. (2006)).

Since OWN is a censored variable that lies in the closed unit interval [0;1], in the 1st stage, we estimate a tobit regression of the following form:

$$OWN_{it} = \alpha_0 + \beta_1 \cdot FIRM\_AGE_{it-1} + \beta_2 \cdot LOG(GDP)_{kt-1} + \beta_3 \cdot RELIGION_{kt-1} + \beta_4 \cdot RISK_k + \beta_5 \cdot DISTANCE_k + \beta_6 \cdot ADRI_k + \beta_7 \cdot DISCLOSURE_k + \alpha_j \cdot \tau_t + \varepsilon_{it} \quad (7)$$

where *i, t, k, j* index firms, years, countries, and industries, respectively. OWN_{it} denotes ownership concentration of firm *i* in year *t*; α_0 captures a general trend in OWN; covariates include (lagged) values of AGE, LOG(GDP), RELIGION, RISK, DISTANCE, ADRI, and DISCLOSURE; $\alpha_j \cdot \tau_t$ are industry-year fixed effects; and ε_{it} is the error term. The fitted value from the cross-sectional tobit regression specified by model (6)–denoted by ivOWN–is as an instrument for original OWN and is used to estimate model (4) in the 2nd stage.

Table 10 reports coefficients from the 2nd-stage regression of financial leverage on ΔEPL and its interaction with ivOWN predicted in the 1st-stage regression. In columns 2 and 3 (4 and 5), AGE is measured based on the number of years since a firm's incorporation as of 1990 (a firm's establishment). In columns 4 and 5, we include two additional macro-level determinants of ownership structure–the anti-self-dealing index (ASDI developed by Djankov et al. (2008)) and the egalitarianism index (EGALITARIANISM by Schwartz (2004))–into the prediction of OWN. The 2nd stage results reported in Table 10 continue to provide strong evidence of a statistically significant and positive (negative) relationship between labor power and financial leverage in widely-held (closely-held) firms. As expected, the magnitude of the 2SLS coefficients for ΔEPL and ΔEPL #ivOWN is slightly higher than that of the OLS coefficients reported in Table 4, while the significance remains largely unchanged. Overall, we conclude that our baseline results are robust to concerns related to the endogeneity of ownership structures.

[Table 10 goes about here]

2. Alternative Definitions of Ownership Structure

Previous literature documents that shareholders' objectives are determined not only by the size of their ownership stakes but also by the type of a (controlling) shareholder (Holderness and Sheehan (1988)). Strategic investors, like insiders, hold relatively large ownership stakes and thus, are less diversified when compared to institutional investors. Relatedly, strategic investors pursue long-term strategic objectives for the firm they invest in, while institutional investors are often focused on short-term returns (Gompers and Metrick (2001), Ferreira and Matos (2008)). To take into account differences depending on the type of an owner, we further distinguish between strategic and institutional investors. To this end, we collect granular ownership data on the type of investor from the *Thomson One Banker* database.

Table 11 reports the OLS estimates of model (4) in which ØOWN is substituted by strategic ownership (ØSTRAT). In column 1, STRAT is measured by the cumulative shareholdings of strategic individual investors, holding companies, and state–with the ownership stakes of at least 10%.[14] Next, following prior literature (Almazan et al. (2005), Chen et al. (2007), Ferreira and Matos (2008)), we group strategic and grey institutional investors together. Grey institutions tend to invest with long-term orientation and hence, to have similar objectives as insiders and strategic investors. In column 2, we define STRAT as the cumulative shareholdings of at least 10% held by strategic and grey investors, i.e. bank,

[14] The threshold of 10% is used because some countries in our sample mandate disclosure of ownership stakes starting from 10 % and more. See La Porta et al. (1999) for a similar approach.

insurance, sovereign wealth funds, and ventures, and furthermore, pension funds in column 3. The results reported in columns 1 to 3 are in line with the main findings and our economic intuition.

[Table 11 goes about here]

D. Reform-by-Reform Regressions

One further concern that has not yet been addressed in our analysis is the existence of country-specific (general) adjustment costs. Since our empirical design allows to estimate the ownership-related differential effect of *each* EPL reform, in the following, we conduct the reform-by-reform analysis. Following Faccio and Xu (2018), we consider only *large* EPL reforms, i.e. the reforms that lead to a change in the EPL index by more than 5 percent, which leaves us with 13 EPL reforms.

In the first step, we perform separate firm-level regressions estimating model (4) for each large EPL reform. Following the discussion in section V.A, the sample for each regression consists of firms operating in a country undergoing a change in EPL (treated sample) and firms operating in its two nearest geographic neighbors without a change in EPL (control sample). In the second step, we aggregate estimated coefficients over all reforms and conduct one sample t-test analyzing whether the mean of estimates of interest–ΔEPL and ΔEPL#ØOWN–is statistically different from zero. The results reported in Table 12 are in line with the theoretical predictions and qualitatively and quantitatively similar to main findings.

However, when conducting reform-by-reform regressions, one should keep in mind that the estimates of EPL might be biased due to potential confounding events, whose effects vary across firms with different leverage (e.g., Faccio and Xu (2015)). Considering this limitation, we prefer to draw inference about the ownership-related differential effect of EPL based on the aggregated estimates from a panel regression, in which the effects of randomly distributed confounding events are expected to cancel each other out.

[Table 12 goes about here]

E. Extended Analyses

Underlying Mechanisms of the EPL Change

Our hypothesis on financial flexibility relevance for closely-hold firms implies that prolabor regulation diminish operating flexibility and raise operating leverage whereby in-

creasing firms' risk and cost of financial distress. The effect, referred to as 'operating leverage', is measured as an elasticity of a firm's operating earnings after depreciation with respect to its sales. To explore this economic channel of labor-leverage nexus, we examine whether an increase in EPL leads to an increase in operating leverage and thus, affects firm operating risk. Using the dynamic DDD framework, we estimate the following panel regression model:

$$\Delta LOG(EBIT)_{i\tau} = \alpha_0 + \alpha_1 \cdot \Delta LOG(SALES)_{i\tau} + \sum_{m=-2}^{+2} \beta_{\tau-m} \cdot \Delta EPL_k \cdot Year_{\tau-m} + \sum_{m=-2}^{+2} \delta_{\tau-m} \cdot (\Delta EPL_k \times \Delta LOG(SALES)_i) \cdot Year_{\tau-m} + \theta' \cdot X_{i\tau} + \eta_i + \alpha_j \cdot \tau_\tau + \varphi_{k\tau} + \varepsilon_{i\tau}, \quad (8)$$

where i, t, j, k index firms, years, industries, and countries, respectively. ΔLOG(EBIT) is the one-year change in the natural logarithm of earnings before interest and taxes [ln($EBIT_t$)- ln($EBIT_{t-1}$)]; ΔLOG(SALES) is the one-year change in the natural logarithm of net sales [ln($SALES_t$)- ln($SALES_{t-1}$)]; ΔEPL is the magnitude of EPL change. Apart from the same control variables and fixed effects as used in the model (4), we also include two variables that are related to the operating leverage: asset intensity, as the degree of stickiness increases with the asset intensity (Anderson et al. (2002)) and average country-level financial leverage as first, there is a substitution effect between operating and financial leverage (Lev (1974), Schmid (2016) and Chen et al. (2018)), and second, firm's level of leverage is related to pre-existing country-level financial leverage. Additionally, we control for the crisis dummy.

Column 1 of Panel A of Table 13 reports the results of estimating model (8), which point toward an increasing sensitivity of earnings to sales following an increase in EPL compared to the earning-sales sensitivity before changes in the EPL and in firms not undergoing EPL changes. In Column 2, we estimate the same specification as in Column 1, but we drop observations with no EPL change. The effect of EPL on earning-sales sensitivity remains unchanged.

Following Serfling (2016), we provide two further tests of the operating leverage channel. First, we examine the effect of EPL on firms' earnings persistence. This test bases on the economic argument of more volatile earnings following the increase in operating leverage caused by prolabor regulation. The invers argument is that earnings is less persistent after changes in EPL. To test this prediction, we estimate the following model:

$$PROFITABILITY_{it+1} = \alpha_0 + \beta_1 \cdot EPL_{kt-1} + \beta_2 \cdot PROFITABILITY_{it} + \beta_3 \cdot EPL_{kt-1} \cdot PROFITABILITY_{it} + \theta' \cdot X_{it} + \eta_i + \alpha_j \cdot \tau_t + \varphi_{kt} + \varepsilon_{it} \quad (9)$$

where i, t, j, k index firms, years, industries, and countries, respectively. PROFITABILITY is the forward value of income before extraordinary items plus depreciation and amortization divided by book value of total asset; EPL_{t-1} is the level of EPL, lagged by one year to capture a gap between the passage of the law and its implementation. Control variables and fixed effects are same as used in the model (8). All dependent and independent variables (except the EPL and crisis dummy) are standardized to have a mean of zero and standard deviation of one, to ease interpretation of results.

Column 1 of Panel B in Table 13 shows that changes in labor regulation has a statistically and economically significant effect that offsets the earnings persistence.

Second, we examine the effect of EPL on firms' dismissals decisions after decline in profitability. If operating risk increases because a firm becomes less flexible in adjusting its labor force, then we should find evidence indicating that an increase in EPL is associated with less dismissals.

$$DECLINE\_EMP_{it} = \alpha_0 + \beta_1 \cdot EPL_{kt-1} + \beta_2 \cdot DECLINE_{CF\,it} + \beta_3 \cdot EPL_{kt-1} \cdot DECLINE_{CF\,it} + \theta^{/} \cdot X_{it} + \eta_i + \alpha_j \cdot \tau_t + \varphi_{kt} + \varepsilon_{it} \quad (9)$$

where i, t, j, k index firms, years, industries, and countries, respectively. DECLINE_EMP is the one-year percentage decline in a firm's number of employees ($EMP_t/EMP_{t-1} - 1$), with positive changes set to zero; DECLINE_CF is the one-year percentage decline in a firm's operating cash flow ($CF_t/CF_{t-1} - 1$), with positive changes set to zero; EPL_{t-1} is the lagged level of EPL. Control variables and fixed effects are same as used in the model (8).

Column 2 of Panel B of Table 13 reports the results of estimating model (8), which point toward about half as less dismissals after declining profitability in countries with stricter EPL. Overall, the results in Table 13 underpin the economic argument of stricter labor protection increases operating leverage.

[Table 13 goes about here]

VI. Conclusion

In this paper, we study the moderating role of firms' ownership structure in the relationship between labor power and firms' financing decisions. To this purpose, we examine the sample of listed firms from 28 OECD countries over 1994-2013 and exploit exogenous variation in employment protection laws. Using the EPL index provided by OECD, we specifically focus on changes in regulation for employees with regular and temporary contracts

measuring the strictness of hiring and firing practices and, thus, labor turnover costs. Employing dynamic triple-diff research design in the panel setting, we allow for differential effects of changes in EPL on firm financial leverage conditional on the size of ownership stakes and owner type. We find that, following an increase in employment protection, firm financial leverage increases in firms with diffuse ownership structure and decreases in firms with concentrated ownership structure. These results are supported across all robustness tests we conduct.

Overall, our empirical evidence demonstrates that two competing views on the labor-leverage nexus – the strategic use of debt and financial flexibility view – are not mutually exclusive. Our findings imply that diversified shareholders are less concerned with higher firm-specific risk associated with an increase in labor power. Consistent with the strategic use of debt view, they rather consider raising debt as a strategic device to counteract greater bargaining power of employees caused by an increase in EPL. Supportive of the financial flexibility view, we show that poorly diversified investors with the already high bargaining power pay more attention to financial flexibility issues and may want to decrease leverage to hedge against bankruptcy and other financial distress-related costs. Thus, we argue that that the degree of investor diversification explains the puzzle why the bargaining power or financial flexibility view turns out to be more appropriate in explaining the relationship between labor and leverage in different contexts.

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Tables

Table 1

Sample Construction

Table 1 displays changes in employment protection legislation (EPL) for the sample of twenty-eight OECD countries over 1992-2013. The sample covers the period 1994-2013 (data permitting). Our analysis considers changes in EPL that take place in the year $\tau = 0$ (marked grey) and do not overlap with other changes in EPL in years $\tau = -2$, $\tau = -1$, $\tau = 1$, $\tau = 2$. The five-year window around a change in EPL [$\tau = -2$, $\tau = 2$] is framed. In total, our sample covers twenty-one EPL changes in sixteen OECD countries.

Country	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Australia	1.02	1.02	1.02	1.02	1.02	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.02	1.02	1.02	1.27	1.27	1.27	1.27
Austria	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Belgium	3.24	3.24	3.24	3.24	3.24	3.24	2.11	2.11	2.11	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.23	2.23	2.13	2.13
Canada	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Chile	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.81	2.81	2.81	2.81	2.81	2.81
Czech Republic	.	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	2.22	2.22	2.09	2.09	2.09	2.18	2.18	2.18	2.18
Denmark	1.78	1.78	1.78	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.79	1.79	1.79
Finland	1.85	1.85	1.85	1.85	1.85	1.78	1.94	1.94	1.94	1.94	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86	1.86
France	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	3.05	3.05	3.05	3.05	3.05	3.05	3.00	3.00	3.00	3.00	3.00
Germany	2.92	2.92	2.96	2.90	2.90	2.59	2.34	2.34	2.34	2.34	2.34	2.09	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.90
Greece	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.33	2.21	2.18
Hungary	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.63	1.42
Ireland	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	1.03	1.03	0.95	0.95	0.95	0.95	0.95	0.95	1.01	1.01
Israel	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.46	1.46	1.46	1.46	1.46	1.46
Italy	3.76	3.76	3.76	3.76	3.76	3.76	3.19	3.19	3.01	3.01	2.57	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.34
Japan	1.69	1.69	1.69	1.69	1.69	1.60	1.60	1.60	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Luxembourg	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.00	3.00	3.00	3.00	3.00	3.00
Mexico	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	2.05
Netherlands	2.20	2.22	2.14	2.11	2.11	2.11	2.11	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.88	1.88	1.88	1.88	1.88
New Zealand	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.20	1.20
Norway	2.73	2.73	2.73	2.73	2.76	2.76	2.76	2.76	2.67	2.54	2.54	2.54	2.54	2.54	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67
Poland	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.24	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99	1.99
Portugal	3.98	3.98	3.98	3.98	3.98	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.49	3.49	3.49	3.49	3.18	3.18	3.03	3.03	2.75	2.50
Spain	3.65	3.65	3.65	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.68	2.68	2.68	2.68	2.39	2.45	2.31
Sweden	2.78	2.78	2.28	2.28	2.28	2.07	2.07	2.05	2.05	2.05	2.02	2.02	2.02	2.02	2.02	2.02	1.71	1.71	1.71	1.71	1.71	1.71
Switzerland	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36	1.36
Turkey	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59	3.59
United Kingdom	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.76	0.76	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.74
United States	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

Table 2

Summary Statistics by Country

Table 2 reports summary statistics for the sample of twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL in the year $\tau = 0$ (treated sample) and firms operating in countries without a change in EPL within a five-year window starting in $\tau = -2$ and ending in $\tau = 2$ (control sample). Thereby, firms from the same country can belong to both treatment and control groups at different points in time. Changes in the strictness of employment protection are measured by changes in the OECD EPL index, defined as a weighted average of items that refer to the regulation concerning workers with regular and temporary contracts. ΔEPL is the magnitude of EPL change. The table reports summary statistics for ΔEPL, the number of treated firms (firm-years) and their (average) fraction in the sample, the distribution of firms (firm-year observations) across countries.

	# ΔEPL	ΔEPL		# treated firms	% treated firms	# treated observa-tions	% treated observa-tions	# firms	% firms	# obser-vations	% obser-vations
Country	(1)	(2a)	(2b)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		1st CHANGE	2nd CHANGE								
Australia	2	0.13	-0.13	730	16.15	3,673	16.09	730	6.46	3,673	6.32
Austria	1	-0.19		17	0.38	85	0.37	45	0.40	225	0.39
Belgium	1	-1.13		37	0.82	191	0.84	37	0.33	191	0.33
Canada	n.a.	0		0	0	0	0	450	3.98	2,322	3.99
Chile	n.a.	0		0	0	0	0	47	0.42	232	0.40
Czech Republic	n.a.	0		0	0	0	0	9	0.08	47	0.08
Denmark	1	0.04		8	0.18	38	0.17	72	0.64	357	0.61
Finland	n.a.	0		0	0	0	0	80	0.71	401	0.69
France	2	0.07	-0.05	216	4.78	1,116	4.89	479	4.24	2,481	4.27
Greece	1	-1		6	0.13	30	0.13	13	0.11	65	0.11
Hungary	1	0.25		9	0.20	44	0.19	15	0.13	82	0.14
Ireland	n.a.	0		0	0	0	0	32	0.28	156	0.27
Israel	n.a.	0		0	0	0	0	12	0.11	60	0.10
Italy	n.a.	0		0	0	0	0	106	0.94	558	0.96
Japan	2	-0.09	-0.17	2,398	53.06	12,083	52.92	2,398	21.21	12,083	20.78
Luxembourg	n.a.	0		0	0	0	0	4	0.04	20	0.03
Mexico	n.a.	0		0	0	0	0	6	0.05	28	0.05
Netherlands	1	-0.03		13	0.29	65	0.28	87	0.77	434	0.75
New Zealand	1	0.47		21	0.46	105	0.46	59	0.52	295	0.51
Norway	2	0.03	0.13	86	1.90	453	1.98	91	0.80	478	0.82
Poland	n.a.	0		0	0	0	0	92	0.81	464	0.80
Portugal	2	-0.28	-0.21	26	0.58	133	0.58	26	0.23	133	0.23
Spain	1	-0.12		31	0.69	170	0.74	79	0.70	418	0.72
Sweden	1	-0.31		102	2.26	508	2.22	102	0.90	508	0.87
Switzerland	n.a.	0		0	0	0	0	174	1.54	897	1.54
Turkey	1	-0.04		103	2.28	511	2.24	174	1.54	875	1.50
United Kingdom	1	0.09		716	15.84	3,627	15.89	1,142	10.10	5,983	10.29
United States	n.a.	0		0	0	0	0	4,745	41.97	24,675	42.44
Total				4,519		22,832		11,306		58,141	
(Absolute) mean (SD)		0.24 (0.30)			3.63					3.63	

Table 3

Summary Statistics for Main Variables

Table 3 reports summary statistics for the variables used in the baseline regressions of total book leverage (LEV_T) and long-term book leverage (LEV_{LT}) on labor market regulation (EPL), its interaction with ownership concentration (OWN), and control variables. Panel A presents summary statistics for the full sample covering 58,141 firm-year observations from twenty-eight OECD countries over 1994-2013 (excluding financials and regulated utilities). N, Mean, and SD indicates the number of firm-year observations, means, and standard deviations, respectively. P25, Median, and P75 refer to the 25th, 50th, and 75th percentile values, respectively. Panel B presents summary statistics for firms operating in countries undergoing a change in EPL in the year $\tau = 0$ within a five-year window starting in $\tau = -2$ and ending in $\tau = 2$ (treated sample). Panel C presents summary statistics for firms operating in countries without a change in EPL within a five-year window starting in $\tau = -2$ and ending in $\tau = 2$ (control sample). LEV_T is the book value of total debt divided by the book value of total assets. LEV_{LT} is the book value of long-term debt divided by the book value of total assets. OWN refers to closely held shares, defined as cumulative shareholdings of at least 5% held by individuals, e.g. officers, directors and their immediate families, trusts, the company held by any other corporation, and by pension/benefit plans. ØOWN is the average of OWN taken from the two years prior to a change in EPL [Ø($\tau = -2$), ($\tau = -1$)]. SIZE is the natural logarithm of the book value of total assets. TANGIBILITY is net property, plant, and equipment, all divided by the book value of total assets. PROFITABILITY is earnings before interest and taxes divided by the book value of total assets. GROWTH is the market-to-book ratio, defined as the book value of total assets minus the book value of equity plus the market value of equity, all divided by the book value of total assets. We require LEV_T, LEV_{LT}, and OWN to lie in the closed unit interval [0,1]. All other variables are winsorized at the 1st and 99th percentiles.

				Distribution		
Variable	N	Mean	SD	P25	Median	P75
Panel A: Full Sample						
LEV_T	58,141	0.207	0.186	0.028	0.177	0.333
LEV_{LT}	58,116	0.132	0.150	0.001	0.081	0.216
ØOWN	58,141	0.398	0.230	0.213	0.394	0.574
SIZE	58,141	12.099	2.035	10.748	12.139	13.432
TANGIBILITY	58,141	0.288	0.231	0.096	0.236	0.420
PROFITABILITY	58,141	-0.011	0.317	-0.011	0.051	0.107
GROWTH	58,141	2.190	4.467	0.464	1.252	2.338
Panel B: Treated Sample						
LEV_T	22,832	0.225	0.189	0.052	0.200	0.355
LEV_{LT}	22,830	0.117	0.126	0.004	0.080	0.188
ØOWN	22,832	0.450	0.202	0.313	0.450	0.603
SIZE	22,832	12.426	1.913	11.287	12.490	13.621
TANGIBILITY	22,832	0.306	0.214	0.139	0.277	0.433
PROFITABILITY	22,832	0.014	0.245	0.012	0.043	0.089
GROWTH	22,832	1.145	2.711	0.018	0.075	1.338
Panel C: Control Sample						
LEV_T	35,309	0.195	0.184	0.016	0.161	0.320
LEV_{LT}	35,286	0.142	0.163	0.000	0.081	0.238
ØOWN	35,309	0.365	0.240	0.164	0.338	0.549
SIZE	35,309	11.887	2.083	10.478	11.841	13.271
TANGIBILITY	35,309	0.275	0.241	0.079	0.204	0.408
PROFITABILITY	35,309	-0.028	0.355	-0.042	0.060	0.119
GROWTH	35,309	2.865	5.191	1.052	1.633	2.880

Table 4

Ownership and the Effect of EPL on Leverage: Main Results

Table 4 reports results from the dynamic analysis regressions of leverage on the change in employment protection (ΔEPL) and its interaction with ownership concentration (ØOWN). The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). Columns I.1 and II.1 refer to the baseline model (model (3)) estimated using a difference-in-differences (DID) method:

$$LEV_{i,t} = \alpha_0 + \sum_{m=-2}^{+2} \beta_{t-m} \cdot \Delta EPL_c \cdot Year_{t-m} + \theta \cdot X_{i,t} + \alpha_j \cdot \tau_t + \eta_i + \varphi_{c,t} + \varepsilon_{i,t}$$

Columns I.2 and II.2 refer to the baseline model (model (4)) estimated using a triple-difference (DDD) method:

$$LEV_{i,t} = \alpha_0 + \sum_{m=-2}^{+2} \beta_{t-m} \cdot \Delta EPL_c \cdot Year_{t-m} + \sum_{m=-2}^{+2} \delta_{t-m} \cdot (\Delta EPL_c \cdot \emptyset CHS_i) \cdot Year_{t-m} + \theta \cdot X_{i,t} + \alpha_j \cdot \tau_t + \eta_i + \varphi_{c,t} + \varepsilon_{i,t}$$

In columns I.1 and I.2, the dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. In columns II.1 and II.2, the dependent variable is long-term book leverage (LEV_{LT}), defined as long-term debt over total assets. ΔEPL is the magnitude of EPL change. All other variables are defined in Table A.1 in Appendix. ΔEPL(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØOWN and the standard firm-level leverage determinants (X) that are size, tangibility, profitability, and growth. The intercept (α_0), firm fixed effects (η), industry-year fixed effects (α·τ), and country-specific year trends (φ) are included in every model. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Explanatory Variables	(I.1)	(I.2)	(II.1)	(II.2)
ΔEPL(τ = -1)	0.017	0.035	0.012	0.026
	(0.88)	(0.83)	(0.71)	(0.74)
ΔEPL(τ = 0)	0.027	0.054	0.033	0.049
	(0.77)	(0.86)	(1.07)	(0.89)
ΔEPL(τ = +1)	0.055	0.136***	0.058	0.123**
	(1.29)	(2.78)	(1.42)	(2.65)
ΔEPL(τ= +2)	0.049	0.144**	0.050	0.127**
	(0.85)	(2.66)	(0.89)	(2.28)
ΔEPL(τ = -1)#OWN(Ø(τ = -2), (τ = -1))		-0.038		-0.031
		(-0.62)		(-0.54)
ΔEPL(τ = 0)#OWN(Ø(τ = -2), (τ = -1))		-0.058		-0.038
		(-0.68)		(-0.54)
ΔEPL(τ = +1)#OWN(Ø(τ = -2), (τ = -1))		-0.173**		-0.140***
		(-2.51)		(-3.09)
ΔEPL(τ = +2)#OWN(Ø(τ = -2), (τ = -1))		-0.198***		-0.161***
		(-2.90)		(-3.15)
SIZE	0.038***	0.038***	0.036***	0.036***
	(17.74)	(17.65)	(9.90)	(9.70)
TABGIBILITY	0.156***	0.156***	0.126***	0.126***
	(5.20)	(5.20)	(6.68)	(6.71)
PROFITABILITY	-0.054***	-0.054***	-0.029***	-0.029***
	(-9.78)	(-9.85)	(-9.59)	(-9.67)
GROWTH	-0.001*	-0.001*	-0.000	-0.000
	(-2.01)	(-2.03)	(-1.19)	(-1.24)
OWN(Ø(τ = -2), (τ = -1))$^{\text{DIRECT EFFECT}}$	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes
Country-specific year trends	Yes	Yes	Yes	Yes
Adj. R^2	0.076	0.077	0.062	0.063
N	58,141	58,141	58,116	58,116

Table 5

Ownership and the Effect of EPL on Leverage: Pretreatment Differences

Table 5 reports results from the dynamic analysis triple-difference (DDD) regressions of leverage on the change in employment protection (ΔEPL) and its interaction with ownership concentration (ØOWN). The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). In columns I.1-I.5, the dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. In columns II.1-II.5, the dependent variable is long-term book leverage (LEV_{LT}), defined as long-term debt over total assets. ΔEPL is the magnitude of EPL change. All other variables are defined in Table A.1 in Appendix. In columns I.1 and II.1, the control sample includes firms from the nearest neighbor country. In columns I.2 and II.2 the control sample includes firms from two nearest neighbor countries. Neighbor countries are determined based on the geographic distance between countries' capitals. In columns I.3-I.5 and II.3-II.5, a multivariate propensity score matching method is employed to construct matched samples used in the analysis. In columns I,3 and II.3, matched pairs are built based on ownership concentration (OWN) and industry. In columns I.4 and II.4, treated firms are matched to their nearest neighbors in terms of OWN and industry within a caliper distance of 0.01. In columns I.5 and II.5, matched pairs are built using OWN, industry, size, tangibility, profitability, and growth. ΔEPL(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØOWN and the standard firm-level leverage determinants (size, tangibility, profitability, and growth). The intercept, firm fixed effects, industry-year fixed effects, and country-specific year trends are included in every model. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Explanatory Variables	(I.1)	(I.2)	(I.3)	(I.4)	(I.5)	(II.1)	(II.2)	(II.3)	(II.4)	(II.5)
ΔEPL(τ = -1)	0.020	0.032	0.047	0.055	0.047	0.021	0.028	0.034	0.044	0.033
	(0.41)	(0.73)	(1.23)	(1.36)	(1.20)	(0.54)	(0.82)	(1.06)	(1.37)	(1.29)
ΔEPL(τ = 0)	0.039	0.048	0.066	0.084	0.072	0.047	0.050	0.054	0.062	0.049
	(0.56)	(0.74)	(1.07)	(1.36)	(1.21)	(0.82)	(0.92)	(0.98)	(1.13)	(1.00)
ΔEPL(τ = +1)	0.127**	0.131**	0.161***	0.161**	0.130**	0.128**	0.126**	0.141***	0.139**	0.112**
	(2.40)	(2.56)	(2.88)	(2.76)	(2.71)	(2.76)	(2.80)	(2.81)	(2.71)	(2.23)
ΔEPL(τ= +2)	0.135**	0.140**	0.163**	0.161**	0.177**	0.139**	0.133**	0.151**	0.145**	0.158**
	(2.22)	(2.40)	(2.42)	(2.21)	(2.33)	(2.43)	(2.41)	(2.54)	(2.30)	(2.18)
ΔEPL(τ = -1)#OWN(Ø(τ = -2), (τ = -1))	-0.017	-0.032	-0.050	-0.060	-0.040	-0.022	-0.024	-0.035	-0.052	-0.015
	(-0.24)	(-0.51)	(-0.95)	(-1.04)	(-0.78)	(-0.34)	(-0.41)	(-0.66)	(-0.93)	(-0.35)
ΔEPL(τ = 0)#OWN(Ø(τ = -2), (τ = -1))	-0.043	-0.047	-0.076	-0.112	-0.059	-0.027	-0.020	-0.030	-0.045	-0.009
	(-0.44)	(-0.52)	(-0.94)	(-1.28)	(-0.90)	(-0.36)	(-0.27)	(-0.41)	(-0.60)	(-0.15)
ΔEPL(τ = +1)#OWN(Ø(τ = -2), (τ = -1))	-0.169**	-0.163**	-0.206***	-0.217**	-0.140***	-0.139**	-0.120**	-0.146***	-0.159***	-0.091**
	(-2.27)	(-2.26)	(-3.16)	(-2.79)	(-2.87)	(-2.78)	(-2.60)	(-3.07)	(-2.99)	(-2.67)
ΔEPL(τ = +2)#OWN(Ø(τ = -2), (τ = -1))	-0.190**	-0.187***	-0.211***	-0.226**	-0.187**	-0.158***	-0.137***	-0.161***	-0.173**	-0.135**
	(-2.85)	(-2.91)	(-2.92)	(-2.45)	(-2.58)	(-3.15)	(-3.05)	(-3.06)	(-2.45)	(-2.62)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific year trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.077	0.072	0.093	0.083	0.093	0.063	0.058	0.073	0.064	0.065
N	49,020	51,003	40,143	32,871	21,733	49,003	50,978	40,127	32,861	21,726

Table 6

Determinants of EPL

Table 6 reports results from OLS regressions of EPL on country-level covariates, lagged by one year. The dependent variable is the OECD EPL index (EPL), defined as a weighted average of items that refer to the regulation concerning workers with regular and temporary contracts. Country-level covariates include: UNION, BARG_CENTR, ΔUNION, GDP_GROWTH, CRISIS_DUMMY, CIT, PIT, TAX_REFORM, POL_ORIENT, GINI. UNION is trade union density, defined as trade union members over the total number of employees. BARG_CENTR is an indicator for the predominant level at which wage bargaining takes place rated on a five-point ordinal scale, where higher values indicate higher centralization. ΔUNION is the one-year change in trade union density. GDP_GROWTH is the real annual growth rate in gross domestic product. CRISIS is a binary variable equal to one if a country experiences a systemic banking, currency or sovereign debt crisis in a particular year, and zero otherwise. CIT is the basic (non-targeted) central, sub-central and combined (statutory) corporate income tax rate. PIT is the net statutory tax rate on dividend income to be paid at the shareholder level, taking account of all types of reliefs and gross-up provisions. TAX_REF is an indicator equal to one if a country undergoes a major reform in corporate taxation in a particular year, and zero otherwise. POL is a categorical variable indicating the orientation of country chief executives or the largest government party with respect to economic policy; it equals one for right-wing parties, two - for center parties, three - for lift-wing parties, and zero - in other cases. GINI is the index of inequality calculated on the basis of household-adult-equivalent marketable income. All right-hand side variables, except binary variables, are mean-centered. The intercept and country fixed effects (η) are included in every model. Year FE (τ) denotes year fixed effects. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
UNION	0.004	0.003	0.004	-0.002	-0.002	-0.002	-0.012*
	(0.95)	(0.80)	(1.02)	(-0.35)	(-0.40)	(-0.35)	(-1.92)
BARG_CENTR	0.019	-0.002	-0.013	-0.027	-0.030	-0.032	-0.036
	(0.39)	(-0.05)	(-0.30)	(-0.73)	(-0.84)	(-0.88)	(-1.16)
ΔUNION	0.022**	0.028***	0.030***	0.029***	0.027***	0.024***	0.022***
	(2.54)	(3.60)	(4.01)	(3.65)	(3.49)	(3.38)	(3.04)
GDP_GROWTH		0.020**	0.013*	0.010*	0.009*	0.010*	0.013
		(2.19)	(1.96)	(1.88)	(1.75)	(1.87)	(1.38)
CRISIS			-0.112**	-0.102*	-0.108*	-0.103*	-0.109
			(-2.16)	(-2.00)	(-2.05)	(-1.99)	(-1.69)
CIT				0.011	0.010	0.010	0.004
				(1.17)	(1.09)	(1.10)	(0.48)
PIT				-0.001	-0.002	-0.002	-0.003
				(-0.33)	(-0.46)	(-0.45)	(-0.70)
TAX_REF				0.026	0.025	0.027	0.043
				(0.87)	(0.88)	(0.96)	(1.48)
POL					0.028	0.022	0.019
					(1.51)	(1.15)	(1.07)
GINI						-0.000	0.006
						(-0.01)	(0.26)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	Yes
Adj. R^2	0.010	0.056	0.078	0.119	0.128	0.122	0.187
N	493	493	493	493	493	474	474

Table 7

Ownership and the Effect of EPL on Leverage: Endogeneity of EPL and Confounding Changes in Local Economic Conditions

Table 7 reports results from the triple-difference (DDD) regressions of leverage on employment protection (EPL) and its interaction with ownership concentration (OWN). The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). We use a triple-difference (DDD) method and estimate model (2). In columns I.1-I.3, the dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. In columns II.1-II.3, the dependent variable is long-term book leverage (LEV_{LT}), defined as long-term debt over total assets. EPL is measured by residuals from the following regression:

$$EPL_{kt} = \alpha_0 + \beta_1 \cdot UNION_{kt-1} + \beta_2 \cdot BARG\_CENTR_{kt-1} + \beta_3 \cdot \Delta UNION_{kt-1} + \beta_4 \cdot GDP\_GROWTH_{kt-1} + \beta_5 \cdot CRISIS_{kt-1} + \beta_6 \cdot CIT_{kt-1} + \beta_7 \cdot PIT_{kt-1} + \beta_8 \cdot TAX\_REF_{kt-1} + \beta_9 \cdot POL_{kt-1} + \beta_{10} \cdot GINI_{kt-1} + \eta_k + \tau_t + \varepsilon_{kt}$$

EPL is the lagged residual OECD EPL index (EPL^{res}), defined as a weighted average of items that refer to the regulation concerning workers with regular and temporary contracts. Columns I.2, I.3, II.2, II.3 include EPL^{oth} and its interaction with OWN as additional controls. EPL^{oth} is the lagged EPL index of one nearest neighbor country in columns I.2 and I.3 and the average EPL index of two nearest neighbor countries in columns II.2 and II.3. Nearest neighbor countries are determined based on the geographic distance between countries' capitals.

All other variables are defined in Table A.1 in Appendix. All regressions control for the direct effect of OWN and the standard firm-level leverage determinants (size, tangibility, profitability, and growth). The intercept (α_0), firm fixed effects (η), industry-year fixed effects ($\alpha \cdot \tau$), and country-specific year trends (φ) are included in every model. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Explanatory Variables	(I.1)	(I.2)	(I.3)	(II.1)	(II.2)	(II.3)
EPL	0.034*	0.038*	0.037*	0.034**	0.036**	0.035***
	(1.72)	(1.82)	(1.82)	(2.69)	(2.76)	(2.80)
EPL#OWN	-0.014***	-0.021***	-0.017***	-0.006**	-0.010***	-0.007**
	(-3.54)	(-4.11)	(-4.13)	(-2.29)	(-2.93)	(-2.67)
EPL^{oth}		-0.014***	-0.021***		-0.014***	-0.015**
		(-4.00)	(-4.05)		(-4.94)	(-2.40)
EPL^{oth}#OWN		0.011**	0.017***		0.006**	0.010**
		(2.50)	(3.38)		(2.67)	(2.32)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-specific year trends	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.074	0.074	0.074	0.056	0.056	0.056
N	52,465	52,465	52,465	52,441	52,441	52,441

Table 8

Ownership and the Effect of EPL on Leverage: Potential Confounds

Table 8 reports results from the dynamic analysis triple-difference (DDD) regressions of leverage on the change in employment protection (ΔEPL) and its interaction with ownership concentration (ØOWN). Our baseline estimation model (model (4)) is extended to include additional country controls. The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). The dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. ΔEPL is the magnitude of EPL change. INFLATION is the annual inflation rate. LOG(GDP) is the natural logarithm of gross domestic product in constant 2010 U.S. dollars divided by total population. $COUNTRY\_LEV_T$ is the asset-based weighted average of LEV_T per country-year. All other controls are defined in Table A.1 in Appendix. ΔEPL(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØOWN and the standard firm-level leverage determinants (size, tangibility, profitability, and growth) as defined in Table 3. The intercept, firm fixed effects, and industry-year fixed effects are included in every model. In each column, we allow for creditor rights index-specific year trends compiled by classifying countries into groups based on their (time-invariant) creditor rights index developed by Djankov et al. (2007) and measuring powers of secured lenders in bankruptcy. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
ΔEPL(τ = -1)	0.025	0.031	0.030	0.028	0.026	0.030
	(0.71)	(0.95)	(0.92)	(0.85)	(0.74)	(0.86)
ΔEPL(τ = 0)	0.031	0.043	0.043	0.041	0.041	0.080
	(0.68)	(1.07)	(1.06)	(0.99)	(0.96)	(1.45)
ΔEPL(τ = +1)	0.091**	0.098**	0.098**	0.098**	0.099**	0.118*
	(2.14)	(2.21)	(2.22)	(2.14)	(2.12)	(1.96)
ΔEPL(τ= +2)	0.134***	0.104**	0.104**	0.111**	0.112**	0.118**
	(2.81)	(2.25)	(2.26)	(2.39)	(2.37)	(2.18)
ΔEPL(τ = -1)#OWN (Ø(τ = -2), (τ = -1))	-0.043	-0.054	-0.053	-0.050	-0.049	-0.060
	(-0.82)	(-1.12)	(-1.11)	(-1.04)	(-0.95)	(-1.25)
ΔEPL(τ = 0)#OWN (Ø(τ = -2), (τ = -1))	-0.065	-0.084	-0.082	-0.079	-0.078	-0.135*
	(-1.00)	(-1.43)	(-1.40)	(-1.29)	(-1.27)	(-1.79)
ΔEPL(τ = +1)#OWN (Ø(τ = -2), (τ = -1))	-0.178***	-0.187***	-0.186***	-0.184***	-0.185**	-0.207***
	(-3.22)	(-3.59)	(-3.58)	(-3.39)	(-3.33)	(-2.88)
ΔEPL(τ = +2)#OWN (Ø(τ = -2), (τ = -1))	-0.246***	-0.203***	-0.203***	-0.208***	-0.208***	-0.205**
	(-3.62)	(-3.47)	(-3.45)	(-3.48)	(-3.46)	(-2.79)
INFLATION	0.002	0.002**	0.002**	0.002**	0.002**	0.001*
	(1.61)	(2.29)	(2.33)	(2.62)	(2.68)	(1.91)
LOG(GDP)		0.158***	0.158***	0.160***	0.160***	0.123***
		(3.09)	(3.08)	(4.01)	(3.86)	(3.61)
GDP_GROWTH		-0.003***	-0.003***	-0.003***	-0.003***	-0.001**
		(-5.26)	(-4.74)	(-5.87)	(-5.60)	(-2.81)
CRISIS			-0.001	-0.001	-0.001	-0.004
			(-0.47)	(-0.24)	(-0.21)	(-0.68)
CIT				-0.000	-0.000	-0.000
				(-0.44)	(-0.43)	(-0.30)
PIT				0.001***	0.001***	0.000*
				(7.02)	(7.04)	(1.96)
TAX_REF				0.000	0.001	0.000
				(0.01)	(0.01)	(0.01)

(continued on next page)

Table 8 (continued)

Ownership and the Effect of EPL on Leverage: Potential Confounds

	(1)	(2)	(3)	(4)	(5)	(6)
ΔUNION					0.000	-0.001
					(0.11)	(-0.45)
UNION						0.004**
						(2.12)
BARG_CENTR						-0.002
						(-0.63)
POL						-0.001
						(-0.82)
GINI						0.001
						(0.36)
$COUNTRY\_LEV_T$						0.381***
						(6.29)
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Creditor rights index-specific year trends	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.076	0.078	0.078	0.079	0.079	0.082
N	57,528	57,528	57,528	57,528	57,528	57,233

Table 9

Ownership and the Effect of EPL on Leverage: Alternative Sample Definitions

Table 9 reports results from the dynamic analysis triple-difference (DDD) regressions of leverage on the change in employment protection (ΔEPL) and its interaction with ownership concentration (ØOWN). The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). In column 1, the sample period excludes crisis years 2008-2009. Further, the sample gradually excludes countries that account for a large proportion of the sample, i.e. the US and Canada (column 2), the US, Canada and Japan (column 3), the US, Canada, Japan, and the UK (column 4). In column 5, the sample includes only non-US firm-years with zero foreign assets. The dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. All other variables are defined in Table A.1 in Appendix. ΔEPL(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØOWN and the standard firm-level leverage determinants (size, tangibility, profitability, and growth). Columns 2 to 5 additionally control for CRISIS. The intercept, firm fixed effects, industry-year fixed effects, and country-specific year trends are included in every model. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Sample definition	w/o financial crisis	w/o US, CA	w/o US, CA, JP	w/o US, CA, JP, UK	Foreign assets=0
Explanatory Variables	(1)	(2)	(3)	(4)	(5)
ΔEPL(τ = -1)	0.036	0.051	0.047	0.024	0.080
	(0.82)	(1.49)	(1.22)	(0.66)	(1.54)
ΔEPL(τ = 0)	0.098*	0.090*	0.086*	0.053	0.056
	(1.99)	(2.01)	(1.93)	(1.41)	(1.57)
ΔEPL(τ = +1)	0.179***	0.160***	0.151***	0.129***	0.121***
	(2.80)	(3.92)	(4.12)	(3.18)	(3.74)
ΔEPL(τ= +2)	0.161***	0.152**	0.182***	0.154**	0.130**
	(3.00)	(2.77)	(3.24)	(2.68)	(2.73)
ΔEPL(τ = -1)#OWN(Ø(τ = -2), (τ = -1))	-0.038	-0.058	-0.039	-0.008	-0.132
	(-0.60)	(-1.15)	(-0.71)	(-0.16)	(-1.43)
ΔEPL(τ = 0)#OWN(Ø(τ = -2), (τ = -1))	-0.121*	-0.098	-0.072	-0.023	-0.085
	(-1.71)	(-1.64)	(-1.41)	(-0.57)	(-1.22)
ΔEPL(τ = +1)#OWN(Ø(τ = -2), (τ = -1))	-0.234**	-0.201***	-0.173***	-0.142***	-0.191**
	(-2.65)	(-3.58)	(-3.45)	(-3.33)	(-2.62)
ΔEPL(τ = +2)#OWN(Ø(τ = -2), (τ = -1))	-0.206**	-0.198**	-0.201**	-0.156**	-0.250***
	(-2.55)	(-2.74)	(-2.55)	(-2.22)	(-2.88)
Control variables	Yes	Yes	Yes	Yes	Yes
Crisis indicator	No	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes
Country-specific year trends	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.080	0.089	0.091	0.100	0.088
N	51,990	31,144	19,061	13,078	9,519

Table 10

Ownership and the Effect of EPL on Leverage: Instrumenting Ownership Structure

Table 10 reports results from the dynamic analysis triple-difference (DDD) regressions of leverage on the change in employment protection (ΔEPL) and its interaction with ownership concentration (ØivOWN). The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). The dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. ΔEPL is the magnitude of EPL change. In column 1, ivOWN is a firm's OWN taken from the year of a firm's first appearance in the sample. In columns 2 and 4, ivOWN are fitted values from the tobit regression specified as:

$$OWN_{it} = \alpha_0 + \beta_1 \cdot FIRM\_AGE_{it-1} + \beta_2 \cdot LOG(GDP)_{kt-1} + \beta_3 \cdot RELIGION_{kt-1} + \beta_4 \cdot RISK_k + \beta_5 \cdot DISTANCE_k + \beta_6 \cdot ADRI_k + \beta_7 \cdot DISCLOSURE_k + \alpha_j \cdot \tau_t + \varepsilon_{it}$$

In columns 3 and 5, ivOWN are fitted values from the tobit regression specified by the following model:

$$OWN_{it} = \alpha_0 + \beta_1 \cdot FIRM\_AGE_{it-1} + \beta_2 \cdot LOG(GDP)_{kt-1} + \beta_3 \cdot RELIGION_{kt-1} + \beta_4 \cdot RISK_k + \beta_5 \cdot DISTANCE_k + \beta_6 \cdot ADRI_k + \beta_7 \cdot DISCLOSURE_k + \beta_8 \cdot ASDI_k + \beta_9 \cdot EGALITARIANISM_k + \alpha_j \cdot \tau_t + \varepsilon_{i,t}$$

In columns 2 and 3, FIRM_AGE is the natural logarithm of 1 + the number of years since a firm's incorporation as of 1990. In columns 4 and 5, FIRM_AGE is the natural logarithm of 1 + the number of years since a firm's establishment. LOG(GDP) is the natural logarithm of gross domestic product in constant 2010 U.S. dollars divided by total population. RELIGION refers to population that is Roman Catholic divided by total population. RISK is the uncertainty avoidance index quantifying "the extent to which people feel independent, as opposed to being interdependent as members of larger wholes" (Hofstede, 1980). DISTANCE is the index of genetic distance, i.e. the relatedness in implicit beliefs, customs, habits, biases, conventions, etc., between the population of a particular country and that of the US. ADRI is the (revised) index of shareholder rights measuring the protection of minority owners in the corporate decision-making process. DISCLOSURE is the index of strictness of regulation mandating disclosure by public firms. ASDI is the index of ex ante and ex post private control of self-dealing. EGALITARIANISM is the index measuring "the belief that all people are of equal worth and should be treated equally in society" (Schwartz, 2004). ØivOWN is the average of ivOWN taken from the two years prior to a change in EPL [Ø(τ = -2), (τ = -1)]. All other variables are defined in Table A.1 in Appendix. ΔEPL(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØivOWN and the standard firm-level leverage determinants (size, tangibility, profitability, and growth). The intercept, firm fixed effects, industry-year fixed effects, and country-specific year trends are included in every model. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. *t*-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

Explanatory Variables	(1)	(2)	(3)	(4)	(5)
ΔEPL(τ = -1)	0.043	0.027	0.030	-0.029	-0.021
	(1.12)	(0.40)	(0.44)	(-0.59)	(-0.42)
ΔEPL(τ = 0)	0.086	0.030	0.026	0.007	0.009
	(1.30)	(0.28)	(0.25)	(0.08)	(0.09)
ΔEPL(τ = +1)	0.156**	0.170**	0.174**	0.207**	0.229***
	(2.49)	(2.11)	(2.18)	(2.40)	(2.84)
ΔEPL(τ= +2)	0.167**	0.235**	0.261**	0.257**	0.332***
	(2.25)	(2.21)	(2.63)	(2.36)	(4.39)
ΔEPL(τ = -1)#ivOWN(Ø(τ = -2), (τ = -1))	-0.050	-0.030	-0.026	0.045	0.052
	(-1.01)	(-0.28)	(-0.25)	(0.61)	(0.63)
ΔEPL(τ = 0)#ivOWN(Ø(τ = -2), (τ = -1))	-0.112	-0.031	0.011	-0.014	0.044
	(-1.40)	(-0.20)	(0.07)	(-0.10)	(0.31)
ΔEPL(τ = +1)#ivOWN(Ø(τ = -2), (τ = -1))	-0.195**	-0.257**	-0.235*	-0.340**	-0.334**
	(-2.61)	(-2.11)	(-1.89)	(-2.64)	(-2.63)
ΔEPL(τ = +2)#ivOWN(Ø(τ = -2), (τ = -1))	-0.224**	-0.361**	-0.417***	-0.421**	-0.556***
	(-2.51)	(-2.40)	(-3.02)	(-2.49)	(-4.80)
Control variables	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes
Country-specific year trends	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.078	0.077	0.077	0.085	0.086
N	58,141	57,528	57,337	28,940	28,768

Table 11

Ownership and the Effect of EPL on Leverage: Ownership Definitions

Table 11 reports results from the dynamic analysis triple-difference (DDD) regressions of leverage on the change in employment protection (ΔEPL) and its interaction with ownership concentration by strategic blockholders (ØSTRAT). The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. The sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). The dependent variable is total book leverage (LEVT), defined as total book debt over total assets. In column 1, ØOWN refers to cumulative shareholdings of at least 10% held by strategic investors (individuals, holdings, and government). In column 2, ØOWN refers to cumulative shareholdings of at least 10% held by strategic and grey institutional investors (individuals, holdings, government, banks, insurances, sovereign wealth funds, and ventures. In column 3, ØOWN refers to cumulative shareholdings of at least 10% held by strategic and grey institutional investors (individuals, holdings, government, banks, insurances, sovereign wealth funds, ventures, and pension funds. ΔEPL is the magnitude of EPL change. All other variables are defined in Table A.1 in Appendix. ΔEP(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØSTRAT and the standard firm-level leverage determinants (size, tangibility, profitability, and growth) as well as for the weighted mean of leverage. The intercept, firm fixed effects, industry-year fixed effects, and country-specific year trends are included in every model. Indus-tries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. t-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate significance at the 10%, 5%, and 1% levels (two-sided), respectively.

	Strat[1]	StraGrey[1]	StratGrey[2]
	(1)	(2)	(3)
ΔEPL(τ = -1)	0.032	0.028	0.027
	(0.76)	(0.70)	(0.66)
ΔEPL(τ = 0)	0.079	0.075	0.074
	(1.17)	(1.12)	(1.09)
ΔEPL(τ = +1)	0.162*	0.163*	0.163*
	(1.83)	(1.85)	(1.83)
ΔEPL(τ= +2)	0.222*	0.234*	0.226*
	(1.72)	(1.82)	(1.77)
ΔEPL(τ = -1)#STRAT(Ø(τ = -2), (τ = -1))	-0.117	-0.109	-0.103
	(-1.13)	(-1.10)	(-0.99)
ΔEPL(τ = 0)#STRAT(Ø(τ = -2), (τ = -1))	-0.159	-0.150	-0.146
	(-1.41)	(-1.37)	(-1.23)
ΔEPL(τ = +1)#STRAT(Ø(τ = -2), (τ = -1))	-0.283**	-0.281**	-0.279**
	(-2.48)	(-2.37)	(-2.22)
ΔEPL(τ = +2)#STRAT(Ø(τ = -2), (τ = -1))	-0.364**	-0.394***	-0.379**
	(-2.66)	(-2.81)	(-2.64)
Control variables	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Industry-year FE	Yes	Yes	Yes
Country specific year trends	Yes	Yes	Yes
Adj. R^2	0.068	0.067	0.067
N	17,917	18,608	18,926

Table 12

Ownership and the Effect of EPL on Leverage: *t* Test for the Coefficients from the Reform-by-Reform Regressions

Table 12 reports results from the one sample *t* test, analysing whether the means of estimated coefficients from the model (4) are statistically different from zero. Columns 1-5 show the average values of the regression coefficients, the *t*-statistics, and corresponding p-values, respectively. We focus on large EPL reforms, i.e. changes that lead to an increase (a reduction) in the EPL index by more than 5 percentage points. For each large change in EPL, we estimate model (4) based on the sample that consists of firms operating in a country undergoing a change in EPL (treated sample) and firms operating in its two nearest neighbor countries without a change in EPL (control sample). Nearest neighbor countries are determined based on the geographic distance between countries' capitals. The dependent variable is total book leverage (LEV_T), defined as total book debt over total assets. ΔEPL is the magnitude of EPL change. All other variables are defined in Table A.1 in Appendix. ΔEPL(τ = -2) and ΔEPL(τ = -2)#OWN(Ø(τ = -2), (τ = -1)) are the reference categories. All regressions control for the direct effect of ØOWN and the standard firm-level leverage determinants (X) that are size, tangibility, profitability, and growth. The intercept (α_0), firm fixed effects (η), industry-year fixed effects ($\alpha_{\cdot\tau}$), and country-specific year trends (φ) are included in every model. Industries are defined according to the 12-industry portfolio classification scheme of Fama and French. Standard errors are robust to heteroscedasticity.

	Coefficients	*t*-statistics	Pr(|T| = |t|)
Explanatory Variables	(1)	(2)	(3)
ΔEPL(τ = -1)	0.040	1.060	0.310
ΔEPL(τ = 0)	0.064	1.240	0.239
ΔEPL(τ = +1)	0.195	2.664	0.021
ΔEPL(τ= +2)	0.083	1.153	0.271
ΔEPL(τ = -1)#OWN(Ø(τ = -2), (τ = -1))	-0.082	-1.500	0.159
ΔEPL(τ = 0)#OWN(Ø(τ = -2), (τ = -1))	-0.109	-1.381	0.193
ΔEPL(τ = +1)#OWN(Ø(τ = -2), (τ = -1))	-0.310	-3.397	0.005
ΔEPL(τ = +2)#OWN(Ø(τ = -2), (τ = -1))	-0.190	-2.239	0.045

Table 13

EPL, Operating Leverage, Earnings Profitability, and Employment Decisions

Panel A of Table 14 reports results from the dynamic analysis triple-difference (DDD) log-log regressions exam-ining the sensitivity of profit to sales. The analysis covers non-financial, non-utility firms from twenty-eight OECD countries over 1994-2013. In Column A.1 the sample consists of firms operating in countries undergoing a change in EPL (treated sample) and countries without a change in EPL (control sample). In Column A.2 the sam-ple consists only of firms operating in countries undergoing a change in EPL (treated sample). To remove outlin-ing effects of corpo-rate restructuring events, we drop observations if net sales increase or decrease by more than 60% in the current or prior year. In columns A.1 and A.2, the dependent variable (Δ LOG(EBIT)) is the one-year change in the natural logarithm of earnings before interest and taxes [ln(EBITt)- ln(EBITt-1)]. Δ LOG(SALES) is the one-year change in the natural logarithm of net sales [ln(SALESt)- ln(SALESt-1)]. ΔEPL is the magnitude of EPL change. Panel B of Table 14 reports results from triple-difference (DDD) regressions examining the effect of the EPL on earning persistence in column B.1 and the effect of the EPL on the relationship between a decline in the number of employees and a decline in firms' operating cash flow in column B.2. In column B.1, the depend-ent variable is the forward value of PROFITABILITYt+1, defined as income before extraordinary items plus depreci-ation and amortization. PROFITABIL-ITY is the contemporary value of profitability. In column B.2, the dependent variable (DECLINE_EMP) is the one-year percentage decline in a firm's number of employees (EMPt/EMPt-1 – 1), with positive changes set to zero. DECLINE_CF is the one-year percentage decline in a firm's operating cash flow (CFt/CFt-1 – 1), with positive changes set to zero. In all regressions, we control for same variables as used in the financial leverage regressions (size, tangibility, profitability, and growth) and additionally control for AVERAGE FINANCIAL LEVERAGE defined as assets-based weighted average of total book leverage per country-year; ASSET INTENSITY, defined as logarithm of total assets divided by net sales; and CRISES, defined as indicator equal to one if a country experiences a systemic banking, currency or sovereign debt crisis in a particular year, and zero otherwise. All variables are defined in Table A.1 in Appendix. ΔEPL(τ = -2) and ΔEPL(τ = -2)#Δ LOG(SALES)(τ = -2) are the reference categories. The intercept, firm fixed effects, industry-year fixed effects, and country-specific year trends are included in every model. Indus-tries are defined according to the 12-industry portfolio classifica-tion scheme of Fama and French. Standard errors are robust to heteroscedasticity and clustered at the country level. t-statistics are reported in parentheses below the coefficient estimates. *, **, and *** indicate signifi-cance at the 10%, 5%, and 1% levels (two-sided), respectively.

Panel A. EPL and Operating Leverage

	Dependent Variable = Δ LOG(EBIT)	
Explanatory Variables	(A.1)	(A.2)
Δ LOG(SALES) (τ = -1)	1.176***	1.066***
	(21.64)	(7.72)
Δ LOG(SALES) (τ = 0)	1.237***	1.167***
	(11.74)	(10.58)
Δ LOG(SALES) (τ = +1)	1.257***	1.502***
	(13.21)	(6.93)
Δ LOG(SALES) (τ= +2)	1.327***	1.403***
	(9.86)	(5.52)
ΔEPL(τ = -1)#Δ LOG(SALES) (τ = -1)	0.205	-0.015
	(0.42)	(-0.03)
ΔEPL(τ = 0)#Δ LOG(SALES) (τ = -1)	0.374	0.059
	(0.34)	(0.05)
ΔEPL(τ = +1)#Δ LOG(SALES) (τ = -1)	0.657**	1.138**
	(2.14)	(2.80)
ΔEPL(τ = +2)#Δ LOG(SALES) (τ = -1)	-1.319	-0.780
	(-1.43)	(-1.23)
Control variables	Yes	Yes
Firm FE	Yes	Yes
Industry-year FE	Yes	Yes
Country-specific year trends	Yes	Yes
Adj. R^2	0.288	0.276
N	35,172	15,970

(continued on next page)

Table 13 (continued)

EPL, Operating Leverage, Earnings Profitability, and Employment Decisions

Panel B. EPL, Earnings Profitability, and Employment Decisions

Dependent Variable	$PROFITABILITY_{t+1}$	DECLINE_EMP
Explanatory Variables	(B.1)	(B.2)
EPL_{t-1}	0.132	0.358
	(0.80)	(1.19)
PROFITABILITY	0.039***	
	(2.82)	
EPL_{t-1}# PROFITABILITY	-0.068***	
	(-4.07)	
DECLINE_CF		0.026***
		(3.07)
EPL_{t-1}#DECLINE_CF		-0.012***
		(-3.49)
Control variables	Yes	Yes
Firm FE	Yes	Yes
Industry-year FE	Yes	Yes
Country-specific year trends	Yes	Yes
Adj. R^2	0.033	0.047
N	50,321	42,064

Figures

FIGURE 1

The OECD EPL index composition

Figure 1 illustrates construction of the index of the strictness of employment protection legislation (EPL) by the OECD. In version 1 of the index covering years 1985-2013, EPL is composed of basic items that refer to the regulation on dismissals and the use of temporary contracts as of January 1st of each year. Code (1), (2), (3) and Name (1), (2), (3) refer to sub-indicators at the highest, intermediate, and the lowest level of aggregation, respectively. At each level of aggregation, indicators take on numerical values ranging from 0 to 6, where higher scores indicate stricter labor market regulation. The synthetic EPL index is a weighted average of individual indicators with weights reported in the last column of this table. Source: OECD Employment Protection Database.

Code (1)	Name (1)	Code (2)	Name (2)	Code (3)	Name (3)	Weight
EPRC	Regular contracts	REGULAR1	Procedurial inconveniance (1/3)	REG1	Notification procedures	1/2
				REG2	Delay involved before notice can start	1/2
		REGULAR2	Notice and severance pay for no-fault individual dismissal (1/3)	REG3A	Length of the notice period at 9 months tenure	1/7
				REG3B	Length of the notice period at 4 years tenure	1/7
				REG3C	Length of the notice period at 20 years tenure	1/7
				REG4A	Severance pay at 9 months tenure	4/21
				REG4B	Severance pay at 4 years tenure	4/21
				REG4C	Severance pay at 20 years tenure	4/21
		REGULAR3	Difficulty of dismissal (1/3)	REG5	Definition of justified or unfair dismissal	1/4
				REG6	Length of trial period	1/4
				REG7	Compensation following unfair dismissal	1/4
				REG8	Possibility of reinstatement following unfair dismissal	1/4
EPT	Temporary contracts	EPFTC	Fixed-term contracts (1/2)	FTC1	Valid cases for use of fixed-term contracts	1/2
				FTC2	Maximum number of successive fixed-term contracts	1/4
				FTC3	Maximum cumulated duration of successive fixed-term contracts	1/4
		EPTWA	Temporary work agency employment (1/2)	TWA1	Types of work for which temporary work agency (TWA) employment is legal	1/2
				TWA2	Restrictions on the number of renewals of TWA assignments	1/4
				TWA3	Maximum cumulated duration of TWA assignments	1/4

FIGURE 2

Firm Financial Leverage Around Changes in Employment Protection Legislation Depending on the Ownership Concentration

Figure 2 illustrates firm leverage around changes in employment protection in widely-held firms and in closely-held firms. The sub-sample of widely-held (closely-held) firms consists of firms with blockholder ownership of approximately 0% (approximately 100%). LEV_T values are calculated separately for treated and control firms. Each dot represents the demeaned average leverage, net of firm-specific characteristics, time-varying industry conditions, and country-specific time trends in the respective year.

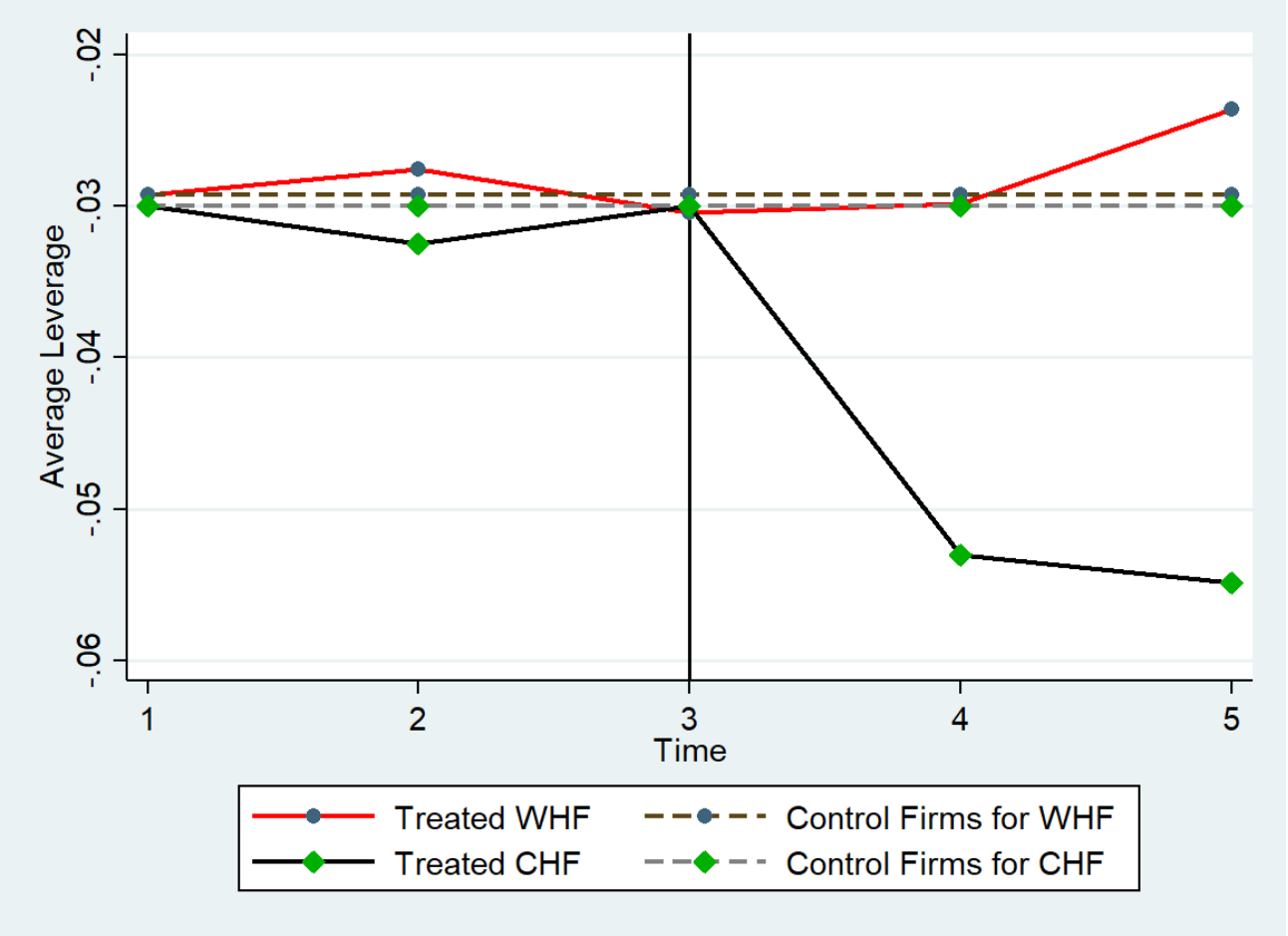
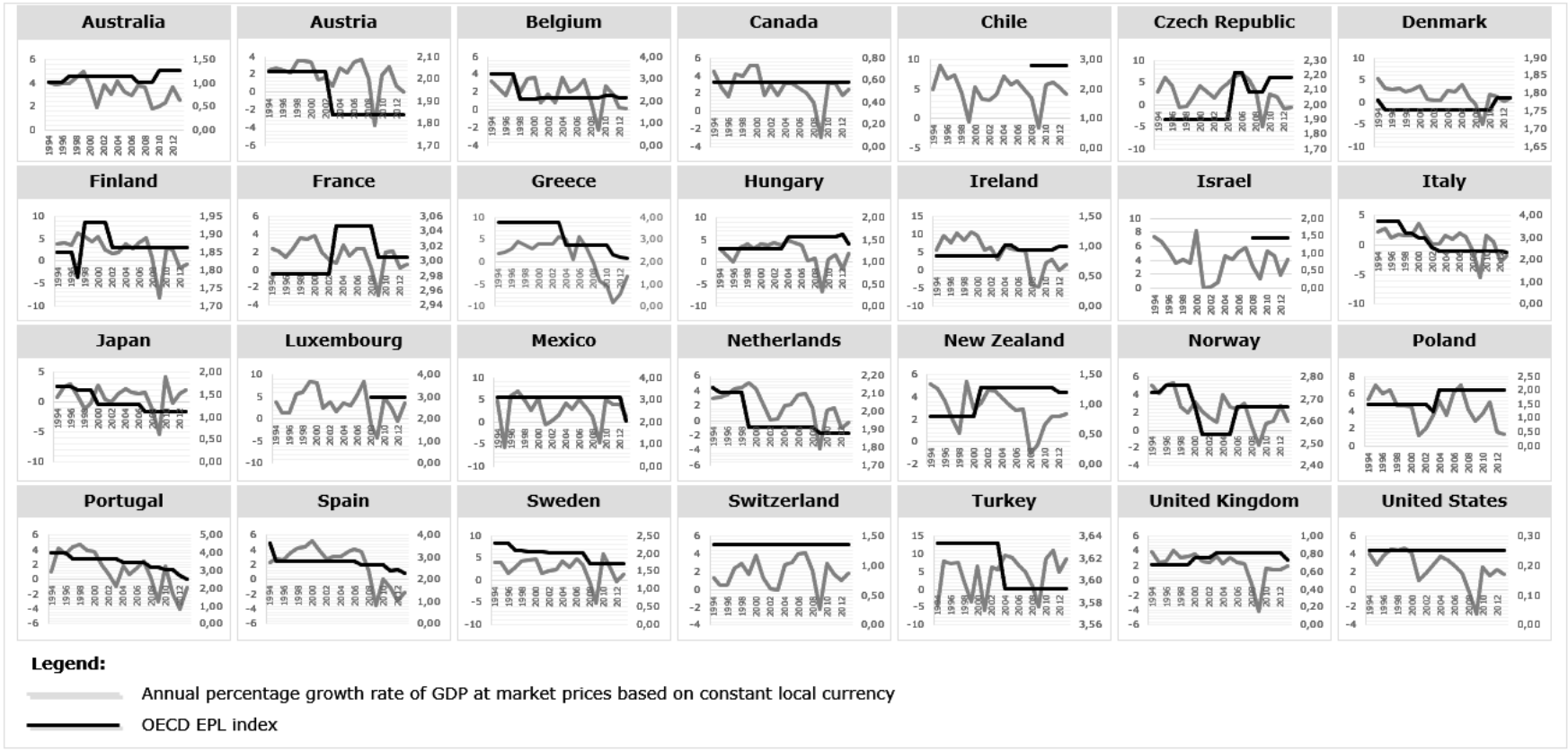


FIGURE 3

Economic Growth and EPL

Figure 3 illustrates development in GDP growth and EPL index in 28 OECD countries over the sample period 1994-2013. GDP growth values are shown on the left-hand side axis. EPL values are shown on the right-hand side axis.



Appendix

TABLE A.1
Variables, Definitions, and Sources

Table A.1 provides an overview of all variables used in this paper, their definitions, and their sources.

Variable	Definition	Source
Panel A: Dependent Variables		
LEV_T	Book value of total debt divided by the book value of total assets.	Datastream/Worldscope
LEV_{LT}	Book value of long-term debt divided by the book value of total assets.	Datastream/Worldscope
Δ LOG(EBIT)	The one-year change in the natural logarithm of earnings before interest and taxes.	Datastream/Worldscope
DECLINE_EMP	The one-year percentage decline in a firm's number of employees, with positive changes set to zero.	Datastream/Worldscope
$PROFITABILITY_{t+1}$	Income before extraordinary items plus depreciation and amortisation divided by the book value of total assets.	
Panel B: Measures of Labor Market Regulation		
EPL	Index of strictness of employment protection as a weighted average of items that refer to the regulation concerning workers with regular and temporary contracts.	OECD
EPL_2	Index of strictness of employment protection as a weighted average of items that refer to the regulation concerning workers with regular and temporary contracts and cover additional provisions for collective dismissals.	OECD
EPRC	Index of strictness of employment protection against individual dismissals of workers on regular/indefinite contracts.	OECD
EPT	Index of strictness of regulation on the use of fixed-term and temporary work agency contracts.	OECD
EPL^{other}	Index of strictness of employment protection of the nearest neighbor countries identified by the shortest distance between country capitals.	Own calculation based on OECD
Panel C: Ownership Variables		
OWN	Cumulative shareholdings of at least 5% held by individuals, e.g. officers, directors and their immediate families, trusts, the company held by any other corporation, and by pension/benefit plans.	Datastream/Worldscope
STRAT_1	Cumulative shareholdings of at least 10% held by strategic investors, i.e. corporations, holding companies, individuals, and other insiders.	Datastream/Worldscope
STRAT_2	Cumulative shareholdings of at least 10% held by strategic investors, i.e. corporations, holding companies, individuals, and other insiders.	Datastream/Worldscope
STRAT_3	Cumulative shareholdings of at least 10% held by strategic investors, i.e. corporations, holding companies, individuals, and other insiders.	Datastream/Worldscope
Panel D: Firm Controls		
SIZE	The natural logarithm of the book value of total assets.	Datastream/Worldscope
TANGIBILITY	Net property, plant, and equipment, all divided by the book value of total assets.	Datastream/Worldscope
PROFITABILITY	Earnings before interest and taxes divided by the book value of total assets.	Datastream/Worldscope
GROWTH	The market-to-book ratio, defined as the book value of total assets minus the book value of equity plus the market value of equity, all divided by the book value of total assets.	Datastream/Worldscope
$FIRM\_AGE^{INC}$	The natural logarithm of 1 + the number of years since a firm's incorporation as of 1990.	Own calculation based on Datastream/Worldscope
$FIRM\_AGE^{EST}$	The natural logarithm of 1 + the number of years since a firm's establishment.	Own calculation based on Datastream/Worldscope
Δ LOG(SALES)	The one-year change in the natural logarithm of net sales.	Datastream/Worldscope
DECLINE_CF	The one-year percentage decline in a firm's operating cash flow, with positive changes set to zero.	Datastream/Worldscope
ASSET INTENSITY	The natural logarithm of the book value of total assets divided by net sales	Datastream/Worldscope

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Table A.1 (continued)
Variables, Definitions, and Sources

Panel E: Country Controls		
UNION	Trade union density, defined as trade union members over the total number of employees.	OECD/ICTWSS
ΔUNION	The one-year change in trade union density.	OECD/ICTWSS
BARG_CENTR	Indicator for the predominant level at which wage bargaining takes place rated on a five-point ordinal scale, where higher values indicate higher centralization.	ICTWSS
GDP_GROWTH	The real annual growth rate in gross domestic product.	World Bank
CRISIS	Indicator equal to one if a country experiences a systemic banking, currency or sovereign debt crisis in a particular year, and zero otherwise.	Valencia and Laeven (2012)
CIT	The basic (non-targeted) central, sub-central and combined (statutory) corporate income tax rate.	OECD/IMD
PIT	The net statutory tax rate on dividend income to be paid at the shareholder level, taking account of all types of reliefs and gross-up provisions.	OECD
TAX_REF	Indicator equal to one if a country undergoes a major reform in corporate taxation in a particular year, and zero otherwise.	IMF/IBFD TPRD Database,European Commission's TEDB
POL	Categorical variable indicating the orientation of country chief executives or the largest government party with respect to economic policy; it equals one for right-wing parties, two - for center parties, three - for lift-wing parties, and zero - in other cases.	DPI/Cruz et al. (2016)
GINI	Index of inequality calculated on the basis of household-adult-equivalent disposable income.	SWIID/Solt (2016)
INFLATION	The annual inflation rate.	World Bank
LOG(GDP)	The natural logarithm of gross domestic product in constant 2010 U.S. dollars divided by total population.	World Bank
RELIGION	Population that is Roman Catholic divided by total population.	ARDA
DISCLOSURE	Index of strictness of regulation mandating disclosure by public firms.	La Porta et al. (2006)
ADRI	(Revised) Index of shareholder rights measuring the protection of minority owners in the corporate decision-making process.	Djankov et al. (2008)
UNCERTAINTY_AVOID	Index quantifying "the extent to which people feel independent, as opposed to being interdependent as members of larger wholes".	Hofstede (1980)/Hofstede Insights
GENETIC_DIST	Index of relatedness in implicit beliefs, customs, habits, biases, conventions, etc., between the population of a particular country and that of the US.	Spolaore and Wacziarg (2009)
ASDI	Index of ex ante and ex post private control of self-dealing.	Djankov et al. (2008)
EGALITARIANISM	Index measuring "the belief that all people are of equal worth and should be treated equally in society".	Schwartz (2001)/Siegel et al. (2011)
AVERAGE FINANCIAL LEVERAGE	The assets-based weighted average of total book leverage per country-year.	Datastream/Worldscope