9-2019

Family firms and labor market regulation

Morten BENNEDSEN
University of Copenhagen

Sterling HUANG
Singapore Management University, SHUANG@smu.edu.sg

Hannes F. WAGNER
Bocconi University

Stefan ZEUME
University of Illinois at Urbana-Champaign

Citation

BENNEDSEN, Morten; HUANG, Sterling; WAGNER, Hannes F.; and ZEUME, Stefan. Family firms and labor market regulation. (2019). *Review of Corporate Finance Studies*. 8, (2), 348-379.
Available at: https://ink.library.smu.edu.sg/soa_research/1834

Family Firms and Labor Market Regulation

Morten Bennedsen
University of Copenhagen and INSEAD

Sterling Huang
Singapore Management University

Hannes F. Wagner
Bocconi University, IGIER, and ECGI

Stefan Zeume
University of Illinois at Urbana Champaign

In a panel across twenty-eight countries over 10 years, we show that family firms on average enjoy performance advantages over nonfamily firms only when labor markets are less regulated. We confirm this result in a matched firm sample using a survey-based instrument as a family control. Furthermore, family firms exhibit lower variation in employment levels in less-regulated labor markets, supporting the notion that labor relations drive family firms' performance advantages. Our results are consistent with the notion that both family ownership and labor market reforms provide employment protection and thus partly substitute as governance mechanisms. (*JEL* G32)

Received December 17, 2018; editorial decision April 3, 2019 by Editor Andrew Ellul.

Introduction

Family firms are dominant in most countries around the world (La Porta, Lopez-de-Silanes, and Shleifer 1999; Faccio and Lang 2002),

We thank an anonymous referee and our Editor Andrew Ellul for their insightful and constructive comments that significantly improved this paper. We are grateful to Denis Gromb, Maria Guadalupe, Han Kim, Colin Mayer, and Urs Peyer; participants at the Copenhagen Business School Corporate Governance conference; and seminar participants at Bocconi University, INSEAD (Economics, Finance), National University of Singapore, Paris School of Economics (Industrial Organization), and Singapore Management University for comments. We are responsible for any errors. Financial support from the Danish National Research Foundation is gratefully acknowledged. Send correspondence to Hannes Wagner, Department of Finance, Bocconi University, Via Roentgen 1, 20136 Milan, Italy; telephone: +39 02 58363528. E-mail: hannes.wagner@unibocconi.it.

doi:10.1093/rcfs/cfz005 Advance Access publication June 21, 2019

and many studies have shown that family firms perform differently from nonfamily firms (Anderson and Reeb 2003; Pérez-González 2006; Villalonga and Amit 2006; Bennedsen et al. 2007; Miller et al. 2007). However, scholars have only recently started opening the black box of why family firms perform differently.[1] In this paper, we investigate the performance difference between family and nonfamily firms by focusing on families' special contribution to their firms. We show that family firms perform better in the absence of labor market regulation (LMR) and tie this performance difference to how families treat their employees, that is, to labor relations.

We focus on the role of country-level differences in LMR to explain the performance difference between family-controlled and non-family-controlled corporations. We posit that if family firms are better at insuring labor, the relationship-specific investment or incentives to work harder may increase, leading to outperformance by family firms. The paper's main hypothesis (which we elaborate on in the following section) is that the absence of formal labor market regulation potentially induces a relative performance advantage for family firms.

LMR is an important institutional roadblock that has been studied extensively in the macroeconomic literature on barriers for growth. We contribute to this literature by analyzing the firm-level effects of LMR on performance and labor volatility and, in particular, the differential impact of LMR on family-controlled and non-family-controlled corporations. We use the OECD employment protection index to measure LMR across countries and time. The measure has a strong focus on protecting employees from being separated from their jobs and is constructed from submeasures of regular employment protection, temporary employment protection, and the cost of collective dismissals. We document that significant variation exists in the OECD employment protection measure across countries. Importantly, this variation goes well beyond variation in gross domestic product (GDP) per capita and other institutional constraints, such as investor protection and product market competition.

We assemble a data set of 6,983 firms in twenty-eight countries (based on Lins, Volpin, and Wagner 2013). Our firms are large publicly traded corporations, and we use a conservative 25% threshold of voting rights via direct or indirect family shareholdings to define family firms in our benchmark analysis. We collect firm-level data for these firms and investigate to what extent regulation of the labor market and being a family firm interact.

The contribution of the paper can be summarized as follows. First, we find that, in general, LMR does not strongly affect firms' performance. Second, we document that family-controlled corporations on average

[1] See Bertrand and Schoar (2006) and Bennedsen et al. (2010) for surveys.

have higher operating performance and return on capital employed relative to non-family-controlled corporations only in countries with less-regulated labor markets. Third, we show that family firms have less labor volatility only in countries with lower labor market regulation. The two latter findings are consistent with the idea that the ability of family firms to protect labor generates a relative performance advantage in less-regulated countries.

Like most cross-sectional country studies, our analysis is subject to identification challenges that make causal statements difficult. We highlight two such challenges in the paper: First, in a cross-country setting of large publicly traded firms, there might be significant differences in firm characteristics between family and nonfamily firms, and across countries. Accounting for this effect, we confirm our main results using matched samples of family and nonfamily firms. Second, the choice of being a family firm may be affected by the level of regulation in general. Some firms may choose to stay with highly concentrated family ownership, and we cannot be sure this choice is independent of regulation. This concern is supported by the observation that the share of family firms across countries is negatively correlated with the degree of labor market regulation. To mitigate this concern, we instrument the presence of family firms across countries using survey-based questions from the World Value Survey about the strength of family values and trust levels across countries. Our main finding is present in both our matched analysis and when we instrument the ownership choice, providing some comfort regarding the obvious endogeneity concerns. Still, we are well aware of the limitations of these tests, especially in a cross-country setting.

We provide further robustness tests. We document that our results are not merely a reflection of omitting other country-level roadblocks that may be correlated with labor market protection. Our results are robust to controlling for shareholder protection, measured by the *Anti-self-dealing index* and *Antidirector index*, and economic development, measured by the logarithm of GDP per capita. Additionally, the performance difference between family and nonfamily firms is present only when conditioning on LMR but not when conditioning on shareholder protection or economic development. Furthermore, the results are robust to using median regressions, winsorizing at various levels, excluding Japan, and considering return on equity as well as Tobin's q as dependent variables.

By showing that LMR differentially affects family-controlled and non-family-controlled corporations, we also contribute to a recent literature that shows how institutional roadblocks are important for the relative performance of family firms (Bennedsen and Fan 2014; Bennedsen et al. 2015). Ellul, Pagano, and Panunzi (2010) show that the strictness of inheritance laws affects family firms negatively. Tsoutsoura (2013) documents how the removal of inheritance taxes in Greece improved

investment in family firms around succession, and Bennedsen and Nielsen (2010) document how family firm control can provide value in countries with weak investor protection. The notion that regulation interacts with ownership and other firm level corporate governance structures is also a persistent theme in the law and finance literature (La Porta et al. 1998; La Porta, López-de-Silanes, and Shleifer 1999).

2. Hypotheses and Empirical Strategy

The macroeconomic literature on the relationship between growth and regulation of labor and product markets shows that tight LMR is correlated with lower growth, higher unemployment and more rent seeking from incumbent firms (see, e.g., Botero et al. 2004; Besley and Burgess 2004; Blanchard and Giavazzi 2003). Inspired by these results, our departure is to ask how labor regulation and family firm ownership interact. Labor contracts both provide incentives for workers to supply effort and relation-specific investment and provide optimal risk allocation between firms and workers (Knight 1921; Bailey 1974; Azariadis 1975).

In theory, LMR comes with costs and benefits for firms. On the cost side, high firing costs make it costly to downsize the work force and make it difficult to adapt to fast changes in the business environment. On the benefit side, protection of workers can increase the relation-specific investment by workers that are concerned about being held up by the company. Thus, the actual firm level effect of the strength of LMR will depend on how firm structures affect the tradeoff between labor cost and workers relations specific investment.

Recent firm-level studies have found significant differences in management practices for family-controlled firms (Bloom and Van Reenen 2007; Bennedsen et al. 2007). Family business scholars have argued that family firms are better at managing stakeholders and have a more loyal labor force (see, e.g., Davis, Schoorman, and Donaldson 1997; Lansberg 1983, 1988). Further, family firms have been shown to be better at insuring labor (Sraer and Thesmar 2007; Mueller and Philippon 2011; Bach and Serrano-Velarde 2015; Ellul, Pagano, and Schivardi 2018), which could lead to an increase in relationship-specific investments or incentives to work harder. In this paper, we start from (and later confirm) the above documented notion that family firms are better at insuring workers and paying lower wages.

We argue that labor insurance can come either through ownership—that is a firm being family controlled—or through labor market regulation that provides rules for hiring and firing workers. From this follows the paper's main hypothesis: the absence of labor market regulation induces a potential performance advantage for family firms. We then

ask in which environment family ownership creates more value, given that implicit labor contracts and labor market regulation jointly affect the incentives of individual workers. Family firms' superior relationship with their workers yields a comparative advantage in environments where this implicit insurance is most valuable. Given that both implicit labor contracts and labor market regulation provide insurance, we hypothesize that family firms will have a comparative advantage in countries in which less labor market regulation exists.

Our empirical strategy of measuring LMR focuses on firing costs and how easy it is to separate workers from their jobs. Strong labor market regulation reduces the freedom of designing both explicit and implicit labor contracts. When regulation increases the cost of separating workers from firms, this can induce both benefits and costs on the individual firm.

The most obvious impact is that higher firing costs and less flexible use of temporary workers make it difficult for firms to adapt to changes in the business environment. This may increase firm-level costs or induce firms to forgo business opportunities because hiring more labor is risky.

On the benefit side, labor protection can increase relationship-specific investments if workers are concerned about hold-up. Hence, workers who feel safer in their jobs may invest more in skills that are specific to the individual firm. Another firm-level benefit of stronger regulation is that it will serve as a barrier to entry for new firms or for foreign firms that are considering establishing new firms or plants in a given country. Note that if regulation is a powerful barrier to entry, incumbent firms may, on net, benefit from regulation even if it increases labor costs and overall reduces industry or country-level growth.

In our baseline tests we examine the relation between family ownership, country-level LMR and firms' performance using the specification

$$y_{it} = \alpha + \beta_1 X_i + \beta_2 Y_{ct-1} + \beta_3 X_i \times Y_{it-1} + \gamma' Z_{it-1} + \Lambda + \varepsilon_{it},$$

where the dependent is firm i's performance in year t, X_i is a family ownership dummy variable (1/0), Y_{ct-1} is LMR in country c in year $t-1$, Z_{it-1} are a set of firm-level control variables in year $t-1$, and Λ are year, industry, and country fixed effects.

Our empirical strategy is subject to qualifications. First, endogeneity and more specifically potential reverse causality may affect our results. While we attempt to establish causality through matching techniques and instrumental variable estimates, these techniques themselves have limitations, with the most important being that country-level variables to usefully instrument family ownership are hard to find. Second, as in virtually all cross-country settings, data quality and lack of coverage for smaller firms are important issues. For example, many firms lack basic wage data, allowing us to only use subsamples. Finally, while the cross-country setting gives us useful heterogeneity in LMR, at the same time

it limits our ability to pin down the precise channels through which the performance wedge between family and nonfamily firms arises. To illustrate, while relationship specific investments made by workers in family firms are one of the likely channels through which profitability of family firms is augmented relative to other firms in the absence of formal LMR, our data set lacks proxy variables for such investments at the firm level.

3. Data and Summary Statistics

The focus of this paper is to study whether labor market regulation affects the performance difference between family and nonfamily firms. In this section, we provide a description of our data. We introduce the labor market regulation measures and how these measures compare to other country-level roadblocks, such as investor protection, product market regulation, and welfare. We then describe the sample and control variables.

3.1 Labor market regulation

The OECD provides a yearly measure of employment protection based on data collected by the *International Labor Organization (ILO)*. The *ILO* uses country officials and law experts to collect detailed information about firing procedures and notification rules, as well as valid and invalid reasons for firing individuals or groups of workers. All information is aggregated into an employment protection indicator, which we henceforth refer to as *overall employment protection*. Importantly, this measure is comparable across countries.

Figure 1 summarizes how the *overall employment protection* measure is constructed. The *overall employment protection* measure is composed of three submeasures: (1) individual dismissal of workers with regular contracts (weighted with 5/12); (2) regulation of temporary contracts (weighted with 5/12); and (3) additional costs for collective dismissals (weighted with 2/12). Submeasure (1), which we henceforth refer to as *regular employment protection*, is the equally weighted mean of measures for procedural inconveniences, notice and severance pay for no-fault individual dismissals, and difficulty of dismissal—all as a function of how many years an employee has been on a regular contract. Submeasure (2), which we henceforth refer to as *temporary employment protection*, is the equally weighted mean of measures of fixed-term contract conditions and temporary work agency employment. This measure focuses on issues such as when and for which type of work a temporary contract can be used, what the maximum length of a single temporary contract can be, and how many times temporary contracts can be renewed before the worker is required to be offered a regular contract. Submeasure (3) is

<table>
<tr><td rowspan="7">Overall Summary Indicator</td><td rowspan="5">Regular contracts</td><td>Procedural inconveniences (1/3)</td><td>1. Notification procedures
2. Delay to start a notice</td></tr>
<tr><td>Notice and severance pay for no-fault individual dismissals (1/3)</td><td>3. Notice period after

4. Severance pay after
</td><td>9 months
4 years
20 years
4 years
20 years</td></tr>
<tr><td>Difficulty of dismissal (1/3)</td><td>5. Definition of unfair dismissal
6. Trial period
7. Compensation
8. Reinstatement
9. Maximum time for claim</td></tr>
<tr><td>Fixed term contracts (1/2)</td><td>10. Valid cases for use of fixed-term contracts
11. Maximum number of successive contracts
12. Maximum cumulated duration</td></tr>
<tr><td rowspan="2">Temporary contracts</td><td>Temporary work agency employment (1/2)</td><td>13. Types of work for which is legal
14. Restrictions on number of renewals
15. Maximum cumulated duration
16. Authorisation and reporting
17. Equal treatment</td></tr>
<tr><td colspan="2">Collective dismissals</td><td>18. Definition of collective dismissal
19. Additional notification requirements
20. Additional delays involved
21. Other special costs to employers</td></tr>
</table>

Figure 1
OECD employment protection measures
This figure summarizes the compilation of the OECD employment protection measure. The overall measure is constructed by weighting three submeasures: (1) individual dismissal of workers with regular contracts (weighted with 5/12), (2) regulation of temporary contracts (weighted with 5/12), and (3) additional costs for collective dismissals (weighted with 2/12). Measure (1), which is henceforth referred to as *regular employment protection*, is the equally weighted mean of measures for procedural inconveniences, notice, and severance pay for no-fault individual dismissals and difficulty of dismissal. Measure (2), which is henceforth referred to as *temporary employment protection*, is the equally weighted mean of measures of fixed-term contract conditions and temporary work agency employment. Measure (3) is henceforth referred to as *collective dismissal protection*.

henceforth referred to as *collective dismissal protection*. This measure quantifies regulatory burdens and costs that go beyond regular employment protection in that they apply to the dismissal of large groups of workers.

The OECD standardizes employment protection such that the measure decreases in the strictness of regulation on a scale from 0 to 5. We subtract this measure from 5 to obtain a measure that increases in labor market regulation. Table 1 summarizes the labor market measures by country in 2008 (panel A) and their correlations (panel B). Countries are sorted by *overall labor market protection*, starting with the least protected country. The least protected countries are the United Kingdom, Canada, and Ireland. The most protected countries are Turkey, Portugal, Mexico, and France.

Panel B also provides insights into the LMR submeasure. First, overall LMR is positively correlated with two of its subcomponents (temporary and regular LMR) but uncorrelated with collective dismissal. Second, the three subcomponents are not strongly correlated with each other, which is why we investigate which of them drives our result below.

Table 1
Sample countries

A. Country-level measures

Country	Overall LMR	Collective dismissal	Regular LMR	Temporary LMR	Anti-self-dealing	Antidirector	log (GDP per capita)	Product market regulation	Barriers to entrepre-neurship	Barriers to trade & investment	State control
United Kingdom	0.74	2.88	1.12	0.37	.95	4	10.47	.78	.87	0.05	1.43
Canada	0.75	2.63	1.25	0.25	.64	4	10.41	1.02	1.16	0.45	1.44
Ireland	1.07	2.38	1.6	0.55	.79	4	10.71	1.01	1.2	0.15	1.66
Switzerland	1.14	3.88	1.16	1.13	.27	3	10.81	1.3	1.48	0.21	2.22
Australia	1.18	2.88	1.47	0.88	.76	3	10.36	1.2	1.21	0.46	1.94
South Africa	1.25	1.88	1.99	0.5	.81	5	8.39	1.94	2.17	1.35	2.47
Israel	1.37	1.88	1.87	0.88	.73	3	9.94	2.13	2.08	1.21	3.11
Japan	1.43	1.5	1.87	1	.5	5	10.46	1.24	1.36	0.53	1.82
New Zealand	1.45	.38	1.67	1.25	.95	5	10.07	1.23	1.6	0.43	1.66
Denmark	1.5	3.55	1.63	1.38	.46	4	10.73	1.03	1.24	0.5	1.36
Italy	1.88	4.88	1.77	1.99	.42	2	10.28	1.46	1.25	0.55	2.59
Austria	1.99	3.25	2.49	1.5	.21	4	10.49	1.48	1.36	0.85	2.24
South Korea	2	1.88	2.37	1.63	.47	4	9.67	1.6	1.37	1.36	2.06
Finland	2.01	2.57	2.17	1.85	.46	4	10.5	1.16	1.38	0.25	1.84
Netherlands	2.07	3	2.96	1.19	.2	4	10.55	1.04	1.17	0.17	1.76
Germany	2.14	3.75	2.89	1.39	.28	4	10.4	1.36	1.49	0.57	2.02
Sweden	2.16	3.75	2.86	1.46	.33	4	10.57	1.3	1.02	0.36	2.51
Belgium	2.18	4.13	1.73	2.63	.54	2	10.45	1.42	1.58	0.14	2.55
Norway	2.62	2.88	2.25	2.99	.42	4	11.03	1.23	1.22	0.5	1.97
Chile	2.65	0	2.67	2.63	.63	5	8.86	1.43	1.5	0.45	2.34
Brazil	2.75	0	1.37	4.13	.27	5	8.48	1.67	1.97	0.99	–
India	2.77	0	3.54	2	.58	4	6.59	2.25	2.73	1.6	2.78
Greece	2.9	3.25	2.31	3.49	.22	3	9.94	2.36	2.14	1.09	3.87
Spain	3	3.13	2.49	3.5	.37	5	10.11	1.18	1.34	0.17	2.01
France	3.05	2.13	2.47	3.63	.38	5	10.39	1.49	1.45	0.3	2.71
Mexico	3.13	3.75	2.25	4	.17	2	8.98	1.72	2.29	0.99	1.86
Portugal	3.43	2.66	4.16	2.7	.44	3	9.78	1.43	1.31	0.28	2.69
Turkey	3.72	2.21	2.56	4.88	.43	4	8.73	2.26	2.5	0.37	3.91
Mean	2.08	2.54	2.18	1.99	0.49	3.86	9.93	1.45	1.55	0.58	2.25
SD	0.82	1.27	0.71	1.27	0.22	0.93	0.98	0.41	0.47	0.43	0.65

B. Country-level correlations

	Overall	Collective dismissal	Regular	Temporary	Anti-self-dealing	Antidirector	GDP percapita	Product market regulation	Barriers to entrepeneurship	Barriers to trade & investment	State control
Labor market regulation											
Overall	1.00										
Collective dismissal	−0.08	1.00									
Regular	0.69	−0.09	1.00								
Temporary	0.92	−0.05	0.34	1.00							
Investor protection											
Anti-self-dealing	−0.60	−0.38	−0.37	−0.58	1.00						
Antidirector	−0.06	−0.65	0.05	−0.10	0.21	1.00					
GDP per capita	−0.48	0.54	−0.32	−0.44	−0.07	−0.11	1.00				
Competition measures											
Product market reg	0.63	0.33	0.25	0.67	−0.60	−0.38	−0.15	1.00			
Barriers to entrepeneurship	0.56	−0.12	0.29	0.56	−0.42	−0.16	−0.56	0.56	1.00		
Barriers to trade & investment	0.33	0.15	0.10	0.38	−0.44	−0.25	−0.25	0.58	0.35	1.00	
State control	0.59	0.30	0.20	0.68	−0.53	−0.28	−0.02	0.88	0.32	0.19	1.00

This table presents country-level measures (panel A) and correlations (panel B) for all sample countries. We use the same sample countries as Lins, Volpin, and Wagner (2013); they are countries for which the OECD provides labor market regulation (LMR) measures in 2008. The OECD labor market regulation measures include an overall employment protection measure and three submeasures (collective dismissal protection, regular employment protection, and temporary employment protection). Labor market regulation is measured on a scale from 0 to 5, where 0 denotes weak labor market regulation and 5 denotes strong labor market regulation. Also reported are two investor protection measures—the *Anti-self-dealing index* (Djankov et al. 2008) and the *Antidirector index* (La Porta et al. 1998; Djankov et al. 2008)—the log of GDP per capita (from the World Bank), and four OECD competition measures (overall product market regulation and its submeasures: barriers to entrepreneurship, barriers to trade & investment, and state control). Countries are sorted by overall LMR, starting with the country with the weakest LMR.

3.2 Other institutional roadblocks

As we aim to explore the impact of labor market roadblocks on the performance difference between family and nonfamily firms, it is important that our LMR measure is not highly correlated with other country-level variables faced by firms. In the following, we focus on institutional roadblocks (investor protection and product market regulation) and welfare. First, we study the correlation between labor market regulation and two investor protection measures. The *Anti-self-dealing index* measures the strength of minority shareholder protection against self-dealing conducted by controlling shareholders (Djankov et al. 2008). The *Revised antidirector index* is an index that ranges from 0 to 5, depending on how many of five different shareholder rights a country fulfills (La Porta et al. 1998; Djankov et al. 2008). Second, we focus on measures of economic development using the *log of GDP per capita* from World Bank and GDP growth between 2003 and 2008. Third, we examine the relation between LMR and measures of product market regulation provided by the OECD, namely the OECD's overall *product market regulation* measure and its three submeasures: *barriers to entrepreneurship*, *barriers to trade and investment*, and *state control*.

Table 1 tabulates these roadblocks by country and shows their correlation with LMR and other major roadblocks. Figure 2 illustrates the correlation between the overall LMR measure and other roadblocks, as well as welfare.[2]

Table 2 provides first evidence that LMR does not merely capture other country-level measures. Anti-self-dealing is negatively correlated with LMR, while no correlation exists between LMR and antidirector rights. Economic welfare—measured by GDP per capita—is slightly negatively correlated with LMR. Also, some positive correlations exist between product market competition measures and the submeasures of LMR. No individual correlation coefficient goes beyond 0.63; that is, not all variation in LMR is clearly explained by measures of competition. Figure 2 provides additional evidence by showing that none of the low correlations are driven by outliers.

In sum, LMR captures something beyond known country-level roadblocks. At the same time, to alleviate concerns that these country-level measures may drive our results, we include these country-level controls in our regressions.

3.3 Sample description

Our baseline data set is that constructed by Lins, Volpin, and Wagner (2013). The authors start with the December 2006 issue of OSIRIS and

[2] Correlations and plots weigh each country equally. Weighting countries by the number of firms or the number of observations, like in our later analysis, does not affect the conclusions drawn in this section.

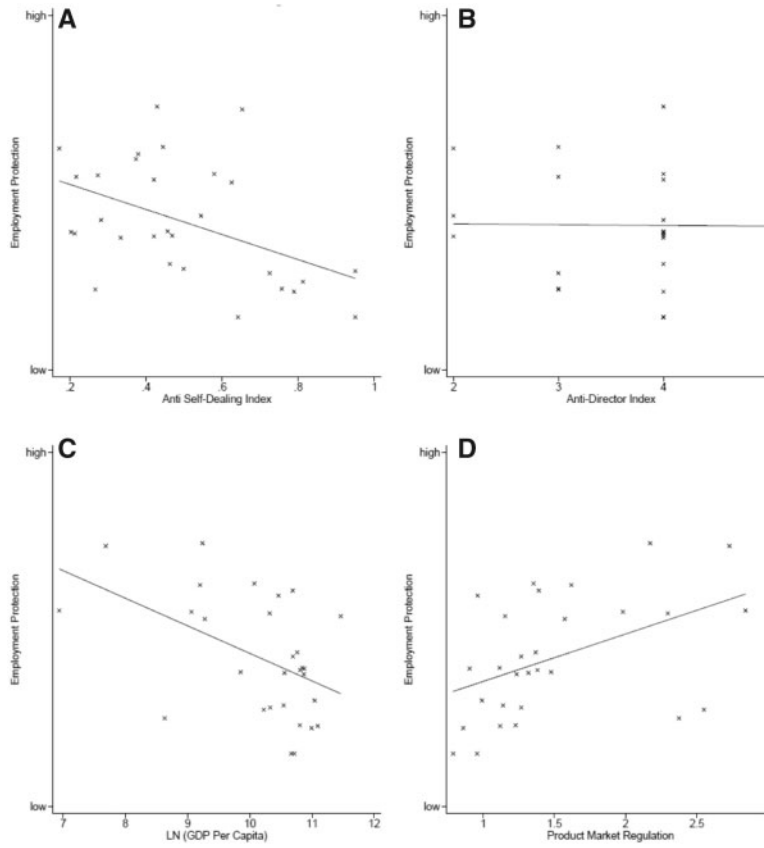

Figure 2
Labor market regulation and other country-level measures
This figure plots the overall OECD Labor Market Regulation measure against various country-level measures for the twenty-eight sample countries. Panels A and B show investor protection measures: the *Anti-self-dealing index* by Djankov et al. (2008) and the *Antidirector index* by La Porta et al. (1998). Panel C shows the logarithm of GDP per capita in 2008. Panel D shows the overall product market regulation measure. Each "x" represents a country.

restrict the sample to firms that (1) are active; (2) report sales, assets, operating profit, and industry for fiscal year 2005; (3) have sales of at least EUR50mn and assets of at least EUR25mn; and (4) are incorporated in countries covered by Djankov et al. (2008). Firms in Fama-French 48 industries with fewer than ten firms in total are removed.

We further restrict the sample to firms that are incorporated in countries for which the OECD employment protection measure is available. This leaves 6,983 unique sample firms in twenty-eight countries. Japan (1,593), the United Kingdom (1,048), and Australia (763) are most represented.

Table 2
Sample firms

A. Family firms by country

Country	Number of firms	Number of family firms	% family firms
Australia	763	42	5.50
Austria	39	7	17.95
Belgium	73	16	21.92
Brazil	96	6	6.25
Canada	430	21	4.88
Chile	58	2	3.45
Denmark	67	7	10.45
Finland	83	7	8.43
France	408	146	35.78
Germany	336	108	32.14
Greece	89	30	33.71
India	328	24	7.32
Ireland	36	3	8.33
Israel	38	4	10.53
Italy	154	49	31.82
Japan	1,593	11	0.69
Korea	491	115	23.42
Mexico	39	5	12.82
Netherlands	84	9	10.71
New Zealand	46	3	6.52
Norway	71	14	19.72
Portugal	31	5	16.13
South Africa	115	16	13.91
Spain	88	20	22.73
Sweden	128	12	9.38
Switzerland	137	21	15.33
Turkey	114	27	23.68
United Kingdom	1,048	90	8.59
Total	6,983	820	11.74

B. Firm-level summary statistics

	N	Mean	Median	SD	25th pctl.	75th pctl.
ROA	45,953	3.2%	5.8%	17.9%	1.4%	10.7%
ROCE	45,953	6.3%	10.2%	32.1%	2.6%	18.6%
log(Assets)	45,953	12.6	12.7	2.1	11.4	13.9
R&D/assets	45,953	1.9%	0.0%	5.9%	0.0%	1.2%
Leverage	45,953	50.1%	51.7%	22.8%	34.2%	66.1%
Age	45,953	15.4	13.0	10.3	7.0	21.0

This table provides firm-level summary statistics. Panel A shows family firms by country. Family firms are firms where voting rights held by an individual or a group of family members exceed 25%, directly or via a control chain. Panel B provides firm-level summary statistics. *ROA* is EBIT over total assets; *ROCE* is EBIT over total assets less current liabilities; *R&D/Assets* is R&D spending over total assets; *Leverage* is total debt over total assets; and *Age* is years since incorporation or years since the firm first appears on Datastream if incorporation year is missing. All nonbinary variables are winsorized at the 1st and 99th percentiles.

We apply the definition of family firm employed by Franks et al. (2012) and Lins, Volpin, and Wagner (2013). *Family firm* is a dummy variable equal to one if voting rights held by an individual or through a group of family members exceed 25%, directly or via a control chain. A more detailed description of the sample selection and family-firm classification can be found in Franks et al. (2012). Table 2, panel A, presents our

sample across countries and divided into total number of firms, number of family firms, and share of family firms. Twelve percent of sample firms are classified as family firms. France (36%), Greece (34%), Germany (32%), and Italy (32%) have the largest fraction of family firms.

One major challenge of using a 25% share of ownership as the definition of family firms is that we leave out firms that are controlled and managed by families with a smaller ownership stake. Whereas this narrowing of the definition is true for all countries, it affects Japan disproportionally, because in Japan, most of the families control their firms with a relatively small amount of ownership and rely more on long-term stable relationships with other key owners, such as financial institutions (Bennedsen et al. 2015). As a result, we categorize few firms as family firms in Japan. To check that our results do not depend on this categorization, we repeat all our analyses by excluding Japan. This alteration does not change the qualitative results; thus, to save space, we only present the results for the full sample including Japan.

Our sample period is 2001–2009, and our family firm identifier is from 2006. Importantly, Franks et al. (2012) show that family ownership is relatively stable using the same data set, and it is thus reasonable to assume it has been fairly robust during the sample period.

3.4 Firm- and industry-level control variables

Panel B of Table 2 provides a brief description of firm- and industry-level controls. All firm-level controls are from Worldscope and Datastream and are winsorized at 1% and 99% levels. Our key performance measures are *Return on assets (ROA)* and *Return on capital employed (ROCE)*, which are constructed as Earnings before interest and taxes (EBIT) over total assets and as EBIT over total assets less current liabilities, respectively. In the robustness section, we additionally confirm our results for measuring performance by *Tobin's q* and *Return on equity*.

Log(Assets) is the log of *total assets*. *R&D/Assets* is defined as research and development costs over total assets where, in line with the literature, research and development costs are assumed to be zero if missing. *Leverage* is defined as long-term debt divided by total assets. L*og(Age)* is the log of years since firm foundation or the log of years since a firm first appeared in DataStream if the foundation year is missing.

The average sample firm has ROA of 3.2%, ROCE of 6.3%, R&D/assets of 1.9%, leverage of 50.1%, and *log(Assets)* of 12.6, the latter reflecting the size criteria imposed by Lins, Volpin, and Wagner (2013) on sample firms. Standard deviations of ROA and ROCE are 17.9% and 32.1%, respectively, which reflect country and industry differences as well as economic up- and downturns captured by our sample period. Given these relatively large standard deviations, our preferred

interpretation of economic magnitudes of main effects is in relation to the standard deviation.

4. Results

As discussed in the introduction, the theoretical impact of higher LMR on firms' performance is ambiguous. First, higher costs of firing workers increase overall production costs and thus reduce profits. Second, higher labor costs may lead firms to substitute labor for capital, thus increasing labor productivity. Third, higher firing costs increase job security of workers. This may have a positive effect on labor productivity if workers make larger relationship-specific investments into their jobs or a negative effect if workers exhibit less effort, knowing that the likelihood of being fired is smaller. Fourth, and finally, higher labor costs may work as a general barrier to entry, which reduces competition and thus allows incumbent firms to enjoy higher rents. As theory suggests many opposing effects of higher labor costs, we focus on the empirical relationship between labor costs and differential performance of family and nonfamily firms.

In this section, we present our results. First, we focus on showing that labor market regulation affects the differential performance of family and nonfamily firms. We begin with univariate illustration, proceed with multivariate regressions, and then focus on selection issues using matched sample and instrumental variable regressions. We then look at which submeasures of labor market regulation drive our results. Next, we provide evidence to show through which channel the differential performance result arises. We conclude with further robustness checks using alternative institutional roadblocks and alternative measures of employment protection.

4.1 Univariate analysis

Table 3, panel A, provides first insights into the firm-level relation between LMR and firms' performance based on univariate analysis. We calculate firms' performance, measured by return on assets, for firms in countries with weak and strong employment protection by family and nonfamily firms. The first row shows that publicly traded firms, in general, have higher returns on assets in countries with high LMR; the difference is 4.89 percentage points and is significant. As we show below, this correlation does not carry over when we add control variables, specifically other country-level controls, to the analysis.

The first column shows that family firms in our sample outperform nonfamily firms by 2.2 percentage points. The double-split reveals that this result is driven by countries with low LMR, while family firms have

Table 3
Univariate performance splits by family control

	All firms (1)	LMR Low (2)	LMR High (3)	Difference (low-high) (2)-(3)
A. Return on assets				
(1) All firms	3.19%	1.97%	6.86%	−4.89%***
(2) Family firms	5.11%	4.16%	6.06%	−1.90%***
(3) Nonfamily firms	2.95%	1.79%	7.10%	−5.31%***
(2) - (3) Difference	2.16%***	2.37%***	−1.04%***	3.41%***
B. Return on capital employed				
(1) All firms	6.26%	4.29%	12.17%	−7.88%***
(2) Family firms	8.90%	7.00%	10.80%	−3.80%%***
(3) Nonfamily firms	5.92%	4.07%	12.57%	−8.50%***
(2) - (3) Difference	2.98%***	2.93%***	−1.77%***	4.70%***

This table compares operating performance of family and nonfamily firms in countries with low and high overall labor market protection (LMR), respectively. Operating performance is measured as return on assets in panel A and return on capital employed in panel B. Each year, the set of sample countries is split into low LMR countries and high LMR countries. Table 2 defines all variables. *$p < .1$; **$p < .05$; ***$p < .01$.

lower ROA than nonfamily firms in countries with high LMR. The *difference-in-differences* of family firms' performance in countries with low versus high LMR is 3.4 percentage points. Hence, family firms have a relative performance advantage in countries with low LMR.

It is important to point out here that the economic magnitude of the effect appears large. However, we have two remarks regarding this effect: First, we so far only look at univariate relations—some of the difference in performance may be driven by other firm characteristics. Second, as noted above, the standard deviation of performance variables throughout our sample period is large. Indeed, a difference in ROA of 3.4 percentage points reflects roughly 20% of the standard deviation of ROA.[3]

Panel B measures performance by return on capital employed and confirms these results. The difference-in-differences is 4.7 percentage points and roughly 15% of the sample standard deviation. Overall, this result supports the notion that family firms' ability to better insure labor is worth more in countries where labor is less protected through public labor market regulation.

Figure 3 takes this simple insight one step further by mapping the gap between return on assets of family and nonfamily firms (vertical axis) to the aggregate level of labor market regulation (horizontal axis). The line of best fit illustrates a clear negative relationship, confirming that family firms have a comparative advantage in countries with lower labor market

[3] Assuming that ROA is normally distributed, a firm with an ROA 3.4% points above the mean and median will be at the 58th percentile.

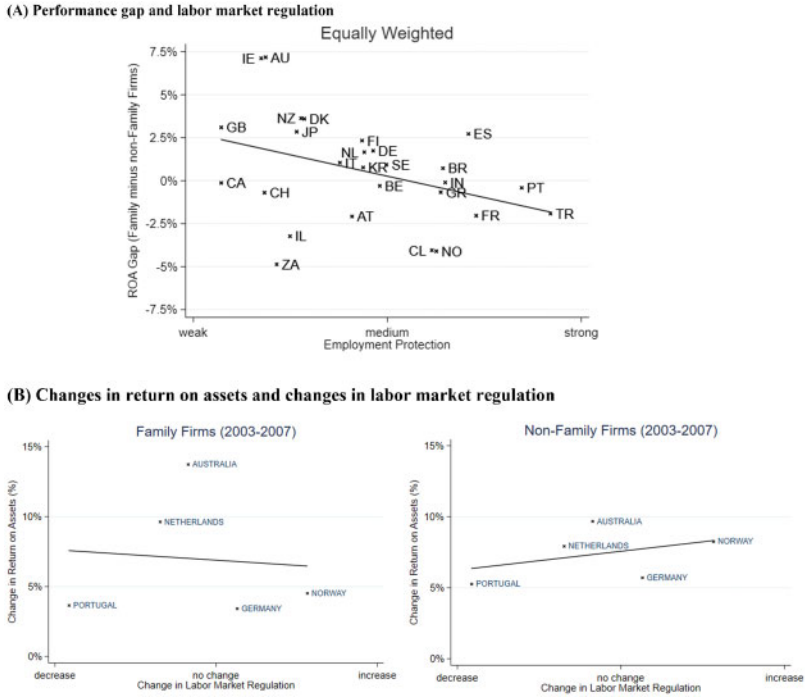

Figure 3
Performance difference and labor market regulation
This figure shows the relation between the performance difference of family versus nonfamily firms and labor market regulation. Each "x" represents one sample country. Labor market regulation is measured using the OECD Overall Labor Protection measure. Panel A plots the average performance difference between family firms and nonfamily firms against the Overall Labor Protection measure. The performance difference is calculated country by country as the difference between average Return on assets (ROA) of family firms and average ROA of nonfamily firms in 2008. Panel B considers the relation between changes in ROAs and changes in Overall Labor Protection between 2003 and 2008 for family firms (left) and nonfamily firms (right). The *x*-axis reflects the change in Overall Labor Protection from 2008 to 2003. The *y*-axis reflects the difference between average ROA in 2008 and average ROA in 2003. Panel C considers the difference in difference; the *x*-axis reflects the change in Overall Labor Protection from 2008 to 2003. The *y*-axis shows the change in ROA of family firms from 2003 to 2008 and the change in ROA of nonfamily firms.

regulation. The difference between return on assets of family and nonfamily firms is positive in countries, such as the United Kingdom, Ireland, Japan, Australia, New Zealand, and Denmark, with a low level of labor market protection. The difference between return on assets of family and nonfamily firms is close to zero or negative in countries, such as France, Norway, Turkey, and Portugal, with a high level of labor market protection. While this illustration is based on equally weighted observations, results are unchanged when weighting country-level observations by the number of sample firms.

Continued

(C) Difference-in-differences: Changes in the performance gap and changes in labor market regulation

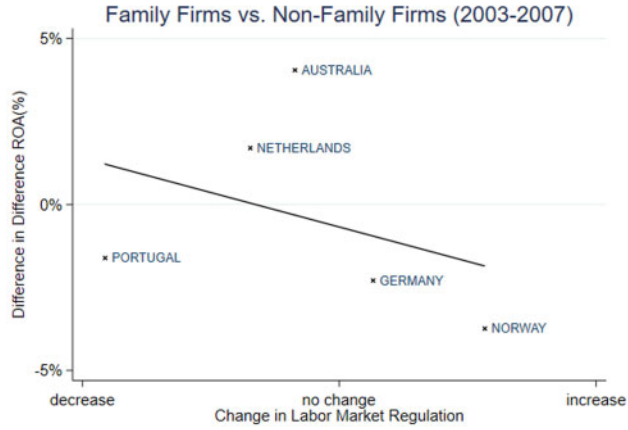

Figure 3
Continued

Next, we consider how changes in labor market regulation affect the performance difference between family and nonfamily firms. Panel B of Figure 3 plots changes in return on assets of family firms (left) and nonfamily firms (right) between 2003 and 2008 against changes in the OECD's LMR measure, focusing on the five countries that experienced a change in the overall labor market protection measure during the period 2003 to 2008. We find weak evidence that an increase in the level of LMR is associated with lower returns on assets in family firms and higher returns on assets in nonfamily firms.

Panel C concludes this part of the analysis by combining the two figures of panel B to show that the difference in return on assets closes as LMR grows stronger. While this evidence is consistent with the results of Table 3 and hints at a causal link between labor market regulation and performance difference, we acknowledge that five countries are too few to draw general conclusions.

In conclusion, this subsection shows that the gap between return on assets of family firms and nonfamily firms decreases in overall strictness of labor market protection. This finding is consistent with the notion that family ownership provides implicit labor protection. Of course, until now, these statements are based on simple univariate correlations. In the following subsections, we provide more evidence for this result—evidence lending support to a causal interpretation of the results.

4.2 Multivariate analysis

We now turn to multivariate analysis. Specifically, the results of the univariate analysis may be subject to firm-level differences in size, firm

age, or industry selection. We start with simple multivariate ordinary least squares (OLS) regressions and add a battery of robustness tests. We then match family firms to nonfamily firms using a propensity score matching method and employ instrumental variable regressions to address selection concerns. We conclude by examining the submeasures of LMR to better understand which types of labor market regulation are driving our results.

4.2.1 LMR and differential performance of family firms. Table 4 analyzes the relation between LMR and firms' performance. The dependent variable is performance measured by *Return on assets* and *Return on capital employed*. The key explanatory variables are LMR and the Family Firm indicator, as well as their interaction. Column 1 shows that LMR does not statistically or economically significantly affect firms' performance, as measured by return on assets. Thus, on average, labor market regulation is not associated with the performance of publicly traded companies. The most important determinants of the performance are firm size, R&D intensity, and country-level GDP per capita.

Next, Column 2 introduces our family firm indicator as an additional control. The family firm dummy loads positively on performance: family firms have 2.1 percentage points higher ROA, reflecting 12% of the sample's standard deviation, respectively. Thus, highly concentrated family ownership (above 25%) is correlated with superior performance. This finding may result from the fact that we are looking at (a) the largest firms in each country and (b) a strict definition of family firms. Many prior studies have analyzed how the definition of a family firm affects the differential performance of family and nonfamily firms (see, e.g., Anderson and Reeb 2003; Villalonga and Amit 2006; Miller et al. 2007; the survey in Bennedsen, Pérez-González, and Wolfenzon 2010). This literature has documented that factors such as size, industry, country, the role of the founder, and the number of generations currently involved in the business are important. Given the size of this literature, we will not pursue this further in the present paper.

We are particularly interested in the effect of being a family firm in low LMR environments. Therefore, we introduce the interaction between LMR and family firms in Column 3. While family firms outperform nonfamily firms in terms of ROA on average, they outperform nonfamily firms less in high LMR countries: the interaction effect is statistically significant at 1% and economically important. Indeed, a one standard deviation decline in LMR (=0.82) is associated with a 1.07 percentage points higher ROA for family relative to nonfamily firms.

As is usual for cross-country studies, we are concerned about a causal interpretation of the main result in Column 3. Differences between family

Table 4
Labor market regulation, family firms, and firms' performance

Dependent variable	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROCE	(6) ROCE
Labor market reg. (LMR)	0.006	0.003	0.006	−0.002	0.009	−0.017
	(0.85)	(0.50)	(0.84)	(−0.05)	(0.79)	(−0.30)
Family firm		0.021***	0.046***	0.040***	0.065***	0.055***
		(3.20)	(5.17)	(3.65)	(4.35)	(2.88)
(LMR) x (Family firm)			−0.013***	−0.011***	−0.017**	−0.016**
			(−3.48)	(−3.25)	(−2.74)	(−2.54)
log(Assets)	0.022***	0.022***	0.022***	0.022***	0.031***	0.031***
	(3.64)	(3.68)	(3.68)	(3.52)	(4.29)	(4.17)
R&D/assets	−0.969***	−0.962***	−0.960***	−0.989***	−1.382***	−1.424***
	(−9.87)	(−10.00)	(−10.00)	(−10.44)	(−10.03)	(−10.85)
Leverage	−0.013	−0.014	−0.014	−0.019	0.057	0.049
	(−0.37)	(−0.40)	(−0.40)	(−0.56)	(1.03)	(0.89)
log(Age)	0.003	0.004	0.004	0.005	0.003	0.005
	(0.34)	(0.36)	(0.36)	(0.49)	(0.19)	(0.33)
log(GDP per capita)	−0.026***	−0.027***	−0.026***	−0.020	−0.046***	−0.035
	(−5.35)	(−5.93)	(−5.62)	(−1.05)	(−4.76)	(−1.01)
Antidirector	−0.011	−0.012	−0.010		0.001	
	(−0.37)	(−0.40)	(−0.32)		(0.03)	
Anti-self-dealing	0.004	0.005	0.006		0.009	
	(1.00)	(1.26)	(1.32)		(1.24)	
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	No	No	No	Yes	No	Yes
Observations	45,953	45,953	45,953	46,708	45,953	46,708
Adj. R-squared	.205	.206	.206	.216	.150	.158

This table reports OLS regressions where the dependent variable is firms' performance. The sample period is 2001–2009. The key explanatory variable is *overall* OECD labor market regulation (lagged). Table 2 defines all firm-level variables, which are lagged by one year. Country-level controls include *log of GDP per capita* (World Bank), *Antidirector index*, *Anti-self-dealing index*, and country fixed effects where indicated. Regressions also include year and industry fixed effects where industries are Fama-French (48) industries. *t*-statistics are in parentheses. Standard errors are clustered at the country level. *$p < .1$; **$p < .05$; ***$p < .01$.

firms and nonfamily firms may be correlated with country characteristics that we are not controlling for in the first three columns. For this reason, we introduce country fixed effects in Column 4 and in most of the following tables. The antidirector and anti-self-dealing measures do not vary across time, so they are absorbed by the country fixed effects. Furthermore, the variation in GDP per capita is very small too, but we keep it in the regression. Whereas the level of LMR is identified by only the five countries that have variation across time, it is important to notice that interaction effect between LMR and family firm status is identified for the whole sample of countries. Introducing country fixed effect does not change our results above, except for making the interaction coefficient between LMR and family firm marginally smaller.

Table 5 presents a battery of robustness tests based on measures of performance and sample selection all with country fixed effects. Our results are significant though economically somewhat smaller when using median regressions (Columns 1 and 2), reflecting that larger and smaller

Table 5
Robustness tests

Dependent variable	(1) Median ROA	(2) Median ROCE	(3) OLS log(1+ROA)	(4) OLS log(1+ROCE)	(5) JPN, excl. ROA	(6) JPN, excl. ROCE	(7) OLS ROE	(8) OLS Tobin's q
LMR	0.027***	0.042***	0.038	−0.011	0.009	−0.000	−0.045	−0.031
	(7.08)	(7.43)	(0.58)	(−0.25)	(0.32)	(−0.01)	(−0.72)	(−0.37)
Family firm	−0.000	0.001	0.054***	0.052**	0.041***	0.057**	0.081***	0.025
	(−0.32)	(1.28)	(3.36)	(2.40)	(3.16)	(2.67)	(2.92)	(0.51)
(LMR) x (Family firm)	−0.006***	−0.008***	−0.014***	−0.017**	−0.011**	−0.016**	−0.029***	−0.005
	(−4.27)	(−3.12)	(−2.85)	(−2.19)	(−2.60)	(−2.21)	(−3.15)	(−0.25)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,708	46,708	46,708	45,771	33,745	33,745	46,707	27,837
Adj. R-squared			.141	.125	.240	.180	.137	.257
Pseudo R-squared	.067	.062						

This table reports a series of robustness test for the results in Table 4. Columns 1 and 2 report results of median regressions for ROA and ROCE. Columns 3 and 4 report results where the dependent variables are ln(1+ROA) and ln(1+ROCE). Columns 5 and 6 report results for ROA and ROCE, excluding Japan. Columns 7 and 8 report results of OLS regressions using return on equity and Tobin's q as dependent variables. Firm-level controls and fixed effects are the same as those used in Table 4. *t*-statistics are in parentheses. Standard errors are clustered at the country level, except in Columns 1 and 2, where robust standard errors are reported. *$p < .1$; **$p < .05$; ***$p < .01$.

ROA and ROCE observations drive some of the economic magnitudes in Table 4. One concern may be that ROA and ROCE are tilted toward positive values, though logging these variables does not affect our results (Columns 3 and 4). One may also argue that our results could be driven by Japanese firms. First, Japanese firms constitute 23% of our sample firms and 26.7% of firm-year observations. Second, as discussed before, the strict definition of family firms used in this analysis means that we have very few family firms in Japan. However, removing Japan from our analysis only marginally affects the economic significance of our results (Columns 5 and 6). Last, we show that our results are robust to using alternative measures of performance, notably *Return on equity* and qualitatively similar using *Tobin's q* (Columns 7 and 8). The economic magnitude of being a family firm and moving to a country with one standard deviation higher LMR represents 6.3% of the standard deviation of ROE. Thus, the economic magnitude is very similar to our results on ROA and ROCE.

In this subsection, we have shown that the gap between R*eturn on assets* of family firms and nonfamily firms decreases in strictness of labor market protection even after controlling for relevant observables and introducing country fixed effects. Furthermore, this result is robust to alternative performance measures, excluding Japan and using median regression techniques.

4.2.2 Selection.

4.2.2.1 Matching. We first address the concern that there is heterogeneity of firm characteristic across types of ownership. We focus on large publicly traded companies across the world, so differences in size and many other dimensions between our family and nonfamily firms are bound to occur. We alleviate this concern by repeating our analysis in a matched sample using propensity score matching. Specifically, for each year, nonfamily firms are matched to family firms in the same country by industry and firm characteristics including log(assets), R&D/assets, and leverage. For each family firm, we choose the one nonfamily firm that is most similar to function as its control group. Panel A of Table 6 shows that propensity scores of family firms and matched nonfamily firms are indistinguishable. Yet univariate analysis in panel A immediately confirms our prior finding that family firms outperform nonfamily firms in a matched sample.

Panel B extends the analysis to a multivariate setting so as to reconfirm our results on the interaction of family firms and labor market regulation. Again, we find that the superior performance of family firms is more pronounced in countries with low LMR. The effect is stronger in magnitude. Indeed, a one standard deviation decline in LMR (=0.82) is

Table 6
Firms' performance for matched samples

A. Outcome of propensity score matching

	Family firms (%)	Nonfamily firms (%)	p-value
Propensity score	26.5	26.2	.24
ROA	5.37	2.85	<.01
ROCE	9.49	5.33	<.01

B. Regressions using the matched sample

Dependent variable	(1) ROA	(2) ROA	(3) ROA	(4) ROCE	(5) ROCE	(6) ROCE
Labor market reg. (LMR)	−0.007	−0.007	0.022	−0.003	−0.004	0.038
	(−0.17)	(−0.17)	(0.44)	(−0.05)	(−0.05)	(0.48)
Family firm		0.018*	0.101***		0.033**	0.153***
		(1.94)	(3.04)		(2.24)	(3.06)
(LMR) x (Family firm)			−0.036**			−0.053**
			(−2.75)			(−2.52)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,194	6,194	6,194	6,194	6,194	6,194
Adj. R-squared	.119	.121	.122	.093	.094	.095

This table reports propensity score matching results. Specifically, nonfamily firms are matched to family firms by country and all firm characteristics using propensity score matching to find the nearest neighbor by propensity score (with replacement) each year. Panel A provides a univariate split by family firm identifier of the propensity score as well as of the key operating performance measures. Panel B performs regressions for the matched sample, where the dependent variable is firms' performance. Firm-level controls and fixed effects the same as those used in Table 4. *t*-statistics are in parentheses. Standard errors are clustered at the country level. $*p < .1$; $**p < .05$; $***p < .01$.

associated with a 2.95 percentage points higher ROA and 4.3 percentage points higher ROCE for family relative to nonfamily firms, reflecting 17.1% and 12.7% of the matched sample standard deviations, respectively. Economically, these effects are slightly larger than for the full sample multivariate analysis and smaller than for the univariate split.

4.2.2.2 Instrumental variable approach. The matching approach does assure that we are comparing similar firms when we study performance differences between family and nonfamily firms. However, we are also concerned that being a family firm with concentrated family ownership could be a choice variable. Some families may dilute ownership because of business needs, while others will maintain control even if they have to forgo potential investment projects. We cannot rule out the possibility that the choice of keeping concentrated family ownership for a publicly traded company is at least partially determined by the level of labor market regulation across countries.

To mitigate the concern of reverse causality or other issues related to endogeneity, we instrument family control using a survey based measure

of family value. The World Value Survey is based on interviews with a representative sample of 1,000-4,000 individuals in each country and conducted over several years. Individuals are randomly chosen from among the entire population. Thus, one strength of using this data to generate instruments for ownership choices is that most if not all of the respondents have little or no connections with the firms in our sample; we therefore claim that mean survey answers are not affected by the ownership choices that owners in our sample make; that is, the answer to the World Value Survey is exogenous to the choice of diluting ownership in our sample.

We use perception of family value from survey participants and variations in that perceptions as instruments to our regression. *Family values* is based on question a001 of the World Value Survey about how important family is in a respondent's life. Respondents can answer on a scale from 1 to 4. We construct the mean response at the year-country level, using data from previous years for years in which the survey was not carried out. Every year, we construct a dummy (*High Family Values*) set equal to one if a country has above-median family values in that year. We argue that strong family values are associated with a higher likelihood of families keeping entrepreneurial activities within the family, including a higher likelihood of family successions when founders retire. Thus, we expect that family firms are more common in countries with strong family values. We use the standard deviation of this variable as our second instrument to capture variations in response to the perceptions of family value. *High Family Value Std* is a dummy equal to one if the standard deviation of family value is above median in a given year and zero otherwise.

Table 7 reports the first-stage estimation in Columns 1 to 2 and second-stage estimations in Column 3 and 4. In the first stage, we use family values and the standard deviation to this to instrument for family firms and the interaction between family firms and LMR. We report the first-stage estimation for *Family Firm* in Column 1 and that for Family Firm interacted with LMR in Column 2. We cluster the standard errors at country level. As predicted, family firms are more important in countries with high family values and high variations in perceptions of family values. First-stage F-tests suggest our instruments are not weak instruments.

Columns 3 and 4 report second-stage results for ROA and ROCE. After correcting for ownership choices, the gap between ROA of family firms and nonfamily firms still significantly decreases in strictness of labor market protection. Second-stage Hansen's J tests are not rejected, suggesting that exogeneity assumptions of our instruments are valid. While this finding confirms that our previous result is not due to reverse causality, we also notice that the magnitude of the coefficients are very

Table 7
Instrumental variable regressions

	(1) First-stage family firm	(2) First-stage (LMR) x (Family firm)	(3) Second-stage ROA	(4) Second-stage ROCE
High family values	0.826***	1.743***		
	(6.37)	(6.40)		
High family values SD	0.626***	1.205***		
	(3.45)	(3.04)		
(LMR) x High family values	−0.437***	−0.952***		
	(−6.65)	(−6.77)		
(LMR) x High family values SD	−0.360***	−0.739***		
	(−4.38)	(−4.02)		
Family firm			1.364***	2.526**
			(2.71)	(2.51)
(LMR) x Family firm			−0.601**	−1.050**
			(−2.30)	(−2.11)
(LMR)	0.465***	1.207***	0.122**	0.217**
	(8.91)	(9.26)	(1.99)	(2.00)
log(Assets)	−0.009**	−0.016*	0.036***	0.071***
	(−2.25)	(−1.73)	(3.38)	(4.67)
R&D/assets	−0.289***	−0.393***	−1.080***	−1.659***
	(−3.06)	(−3.22)	(−12.89)	(−9.64)
Leverage	0.014	0.030	−0.152***	−0.133***
	(0.56)	(0.44)	(−7.65)	(−3.10)
log(Age)	−0.009	−0.020	0.003	0.002
	(−1.55)	(−1.41)	(0.30)	(0.11)
log(GDP per capita)	0.040***	0.133***	0.003	−0.010
	(3.47)	(4.53)	(0.18)	(−0.39)
Anti-self-dealing	−0.266**	−0.390*	0.123*	0.297**
	(−2.34)	(−1.65)	(1.70)	(2.38)
Antidirector	0.009	0.033	0.028**	0.049
	(0.28)	(0.53)	(2.23)	(1.50)
Observations	43,785	43,785	43,785	43,785
Industry FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes
Kleibergen-Paap rk Wald F			9.863	9.862
p-value of Hansen's J test			.5354	.799

This table reports instrumental variable regressions for firms' performance. We instrument both LMR and (LMR) x (Family firm). Columns 1 and 2 show the result of first-stage regressions. The instruments are *High family value* and the interaction of *High family value* and *LMR* as well as *High family value SD* and the interaction of *High family value SD* and *LMR*. Measures of family values are obtained from the World Value Survey. We obtain *Family value* from the World Value Survey, specifically Question a001, which asks how important family is in a respondent's life. Respondents assign a score of 1 to 3 (1 = not very important, 3 = very important) to the question. *High family value* indicates whether a country has an above-median family value score in any given year. *High family value SD* takes a value of 1 if variation in perception of family value is above median in any given year. Columns 3 and 4 show the second-stage results for ROA and for ROCE, respectively. *t*-statistics are in parentheses. Standard errors are clustered at the country level. *$p < .1$; **$p < .05$; ***$p < .01$.

large. However, we exercise the customary caution in interpreting the size of the IV coefficients: First, family values may explain the choice between being a family firm and not being a family firm for some but not for all observations; that is, the IV estimate may come from a subset of observations for which the instrument applies. Second, the predicted value of *Family firm* from stage (1) might no longer be equal to 1, which also makes size interpretations challenging.

4.2.3 Submeasures of LMR. So far, we have established that the overall level of labor market regulation affects the performance gap between family and nonfamily firms in a way consistent with the idea that family firms are better able to protect labor in an environment in which less regulatory protection exists. We now examine which dimensions of labor market regulation drive our result. Remember that the overall labor market regulation measure we use is the accumulation of three submeasures: regulation of permanent employees, regulation of temporary employees, and regulation of collective dismissal. We already noticed above that these measures are quite different and that the correlation between the measures across countries is weak.

Table 8 exactly follows our main specification (Table 4, Column 4) including country fixed effects, but we replace the overall employment protection measure with each of its subcomponents. We notice from the first four columns that the interaction between Family Firm and temporary as well as regular employment regulation is negative. This holds both for ROA and for ROCE as our dependent variables. At the same time, in Columns 5 and 6, the interaction between Family Firm and regulation of collective dismissal is insignificant for the ROA measure but positive for the ROCE performance measure.

Taken together, we conclude that the effect of employment protection on the performance difference between family and nonfamily firms is driven by temporary and regular labor protection and that the regulation of collective dismissal if anything has an opposite effect.

4.3 Labor volatility

The literature has highlighted that family firms have a different tradeoff between worker incentives and worker insurance than do nonfamily firms. Sraer and Thesmar (2007) and Bach and Serrano-Velarde (2015) were the first to show that labor volatility and wage levels are lower in family firms relative to nonfamily firms. This result has been confirmed in a cross-country setting by Ellul, Pagano, and Schivardi (2018) who also show that the degree of labor insurance is correlated with the level of unemployment insurance.

In the following, we investigate whether we can confirm such differences in labor volatility between family and nonfamily firms and specifically, whether, such differences are correlated with the degree of labor market regulation. In case of correlation, the result is consistent with the idea that superior performance by family firms in countries with little regulation of labor indicates that family firms have better labor management.

In Table 9, we study whether labor volatility is associated with LMR, family firms, and the interaction of the two. All controls are taken from

Table 8
Submeasures of labor market regulation, family firms, and firms' performance

LMR submeasure Dependent variable	(1) Temporary ROA	(2) Temporary ROCE	(3) Regular ROA	(4) Regular ROCE	(5) CollDismiss ROA	(6) CollDismiss ROCE
LMR	−0.007	−0.011	0.050	0.035	−0.075	−0.175
	(−0.35)	(−0.36)	(1.63)	(0.55)	(−1.23)	(−1.50)
Family firm	0.039***	0.051**	0.056***	0.076***	0.007	−0.011
	(3.33)	(2.76)	(3.50)	(3.41)	(0.48)	(−0.47)
(LMR) x (Family firm)	−0.009**	−0.012**	−0.016**	−0.022**	0.005	0.014**
	(−2.72)	(−2.12)	(−2.47)	(−2.20)	(1.24)	(2.22)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,708	46,708	46,708	46,708	46,708	46,708
Adj. R-squared	.194	.145	.194	.145	.194	.146

This table reports OLS regressions where the dependent variable is firms' performance, using three submeasures of LMR: *temporary* employment protection, *regular* employment protection, and *collective dismissal* protection. Firm-level controls and fixed effects are the same as those used in Table 4. *t*-statistics are in parentheses. Standard errors are clustered at the country level. *$p < .1$; **$p < .05$; ***$p < .01$.

Table 9
Labor market regulation, family firms, and labor volatility

LMR submeasure	(1) Overall	(2) Overall	(3) Temporary	(4) Regular	(5) CollDis
LMR	1.275	1.044	−0.338	1.386	−0.664
	(0.94)	(0.74)	(−0.90)	(1.08)	(−0.88)
Family firm	1.017	−1.955*	−1.202*	−0.471	4.811*
	(1.19)	(−1.89)	(−1.87)	(−0.42)	(1.99)
LMR*Family firm		1.481**	1.170***	0.703	−1.274*
		(2.38)	(3.07)	(0.90)	(−2.01)
Control variables	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes
Observations	17,731	17,731	17,731	17,731	17,731
Adj. R-squared	.010	.011	.011	.010	.010

This table reports results of OLS regressions for labor volatility at the firm level. The left-hand-side variable is *Labor volatility*, the 4-year moving average standard deviation of percentage change in number of employees. Labor market regulation is the *overall* OECD labor market regulation measure, lagged by 1 year, in Columns 1 and 2, as well as the three submeasures in the remaining columns: *temporary* employment protection, *regular* employment protection, and *collective dismissal* protection. Firm-level controls and fixed effects are the same as those used in Table 4. *t*-statistics are in parentheses. Standard errors are clustered at the country level. *$p < .1$; **$p < .05$; ***$p < .01$.

our main specification in Table 4. The dependent variable, labor volatility, is measured by the logged annual change in employment.

Consistent with the notion that family firms may provide insurance where LMR is otherwise weak, we find that labor volatility is significantly lower across family firms in low LMR countries. Indeed, a one standard deviation decline in LMR is associated with a 1.21 percentage

point reduction in labor volatility for family relative to nonfamily firms. This reduction is economically important: the average year-to-year percentage change in employment is 6.23%, suggesting an effect of 19.4% of the mean.

Table 9, Columns 3, 4, and 5, repeat the analysis but substitute the overall LMR measure with each of its three subcomponents. In line with the notion that our result is by and large explained by temporary and regular employment, we find that the labor volatility effect is economically most important for these submeasures. Statistically, the regulation of temporary employment is significant at the 1% level, whereas regulation of permanent employment is not statistically significant. Again, there is a counteracting effect from the regulation of collective dismissal.

Overall, we document that family firms on average have the same variation in labor as do nonfamily firms. However, in countries with weaker LMR, family firms have significantly lower variation in labor relative to nonfamily firms. This finding supports the claim that the superior performance of family firms in low LMR countries is partly driven by labor relations, such as individual hiring and firing regulations.

4.4 Robustness: Alternative measures of employment protection and alternative roadblocks

In this section, we provide evidence that our main results hold for a range of labor market protection measures that are broadly comparable to LMR and that our results are not obtained by merely replacing LMR by other roadblock measures.

As stated above, our LMR measures are based on data collected by the *ILO*, relying on country officials and law experts to obtain information about firing procedures, notification rules, and group layoffs that are comparable across a wide range of countries. These LMR measures are useful for the purposes of our analysis as they focus on hiring and firing costs. As a further robustness check, we consider three additional labor regulation measures—Social Security Legislation (SSL), Employment Protection Legislation (EPL), and Gross Replacement Rate (GRR)—that are available across countries and conceptually capture some aspects of our LMR measure.

SSL, or Social Security Legislation, as introduced by Botero et al. (2004), measures the level of unemployment benefits. SSL itself is an average of four normalized variables that capture unemployment insurance. EPL, or Employment Protection Legislation against Dismissal, also from Botero et al. (2004), measures worker protection granted by low or mandatory collective agreements against dismissal. EPL is the average of seven dummy variables that capture the legal obstacles employers face when dismissing employees. Finally, GRR, or the

Table 10
Robustness: Alternative measures of labor market regulation

Dependent variable	(1) ROA	(2) ROA	(3) ROA	(4) ROCE	(5) ROCE	(6) ROCE
Family firm	0.039***	0.037**	0.045***	0.056***	0.027	0.060***
	(3.72)	(2.56)	(4.71)	(3.05)	(1.10)	(3.43)
(LMR) x (Family firm)	−0.011**	−0.011***	−0.007*	−0.022***	−0.014*	−0.013
	(−2.73)	(−2.97)	(−1.89)	(−3.54)	(−2.04)	(−1.47)
(SSL) x (Family firm)	−0.002			0.026		
	(−0.09)			(0.88)		
(EPL) x (Family firm)		0.002			0.031**	
		(0.26)			(2.08)	
(GRR) x (Family firm)			−0.048**			−0.044
			(−2.28)			(−1.12)
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,708	46,708	46,708	46,708	46,708	46,708
Adj. R-squared	.216	.216	.216	.158	.158	.158

This table follows the main specification (Table 4, Columns 4 and 6) but additionally introduces alternative measures of labor market regulation. The sample period is 2001–2009, and observations are at the firm-year level. The dependent variables are return on assets (*ROA*; Columns 1–3) and return on capital employed (*ROCE*), respectively. Columns 1 and 4 report results using social security legislation (SSL) from Botero et al. (2004). SSL measures the level of unemployment benefits as the average of the following four normalized variables: (1) the number of months of contributions or employment required to qualify for unemployment benefits by law; (2) the percentage of the worker's monthly salary deducted by law to cover unemployment benefits; (3) the waiting period for unemployment benefits; and (4) the percentage of the net salary covered by the net unemployment benefits in case of a one-year unemployment spell. Columns 2 and 5 report results using employment protection legislation against dismissal (EPL) from Botero et al. (2004). EPL measures worker protection granted by law or mandatory collective agreements against dismissal. It is the average of the following seven dummy variables, which equal 1 (1) if the employer must notify a third party before dismissing more than one worker; (2) if the employer needs the approval of a third party prior to dismissing more than one worker; (3) if the employer must notify a third party before dismissing one redundant worker; (4) if the employer needs the approval of a third party to dismiss one redundant worker; (5) if the employer must provide relocation or retraining alternatives for redundant employees prior to dismissal; (6) if there are priority rules applying to dismissal or layoffs; and (7) if there are priority rules applying to re-employment. Columns 3 and 6 report results using the gross replacement rate (GRR) for 2005 as used by Aleksynska and Schindler (2011). GRR measures unemployment insurance benefits received by a worker over the first 2 years of unemployment as a fraction of the worker's last gross earnings. Firm-level controls and fixed effects are the same as those used in Table 4. *t*-statistics are in parentheses. Standard errors are clustered at the country level. *$p < .1$; **$p < .05$; ***$p < .01$.

Gross Replacement Rate, introduced by Aleksynska and Schindler (2011), measures unemployment benefits of dismissed employees as a fraction of employee earnings. Among these alternatives, EPL is more closely related to our LMR measure, as it focuses on the specific legal rules that apply to the dismissal of employees.

In Table 10, we use SSL, EPL, and GRR instead of our LMR measure to replicate our main results from Table 5. Specifically, the table shows regressions that correspond to Columns 3 and 6 in Table 5, where Alternative Measure represents the alternative country-level labor regulation variable. While coefficients are not directly comparable because of different scaling of the labor regulation variables, the results show that in all regressions the Family Firm dummy maintains its positive sign, and

Table 11
Robustness: Other roadblocks and welfare

	(1)	(2)	(3)	(4)	(5)	(6)
	Anti-self-dealing		Antidirector index		log(GDP per capita)	
	ROA	ROCE	ROA	ROCE	ROA	ROCE
Roadblock					-0.021	−0.036
					(−1.11)	(−1.06)
Family firm	0.007	0.016	−0.012	−0.005	-0.089	−0.166
	(0.66)	(0.79)	(−0.56)	(−0.13)	(−1.41)	(−1.35)
Roadblock*Family firm	0.018	0.011	0.007	0.007	0.011	0.019
	(0.74)	(0.24)	(1.18)	(0.63)	(1.69)	(1.56)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,708	46,708	46,708	46,708	46,708	46,708
Adj. R-squared	.216	.158	.216	.158	.216	.158

This table follows the main specification (Table 4, Columns 4 and 6) but uses alternative roadblocks and welfare. The sample period is 2001–2009, and observations are at firm-year level. The dependent variables are return on assets (*ROA*; odd-numbered columns) and return on capital employed (*ROCE*; even-numbered columns), respectively. The key explanatory variable is Djankov et al.'s (2008) *Anti-self-dealing index* (Columns 1 and 2), La Porta et al.'s (1998) *Antidirector index* (Columns 3 and 4), and *log of GDP per capita* from the World Bank (Columns 5 and 6). Firm-level controls and fixed effects are the same as those used in Table 4. *t*-statistics are in parentheses. Standard errors are clustered at the country level. $*p < .1$; $**p < .05$; $***p < .01$.

its interaction with SLL and GRR is negative. However, the interaction with EPL is positive but only statistically significant when we use the ROCE performance measure.

Overall, this finding confirms that our main results are robust to using alternative measures of labor market regulation. Because these alternative measures focus on several different aspects of labor market relations, and as some of these differences are more subtle than we can capture here, we treat these results as a robustness test only.

We illustrate in the data section that variation in labor market regulation goes beyond variation in other country-level roadblocks and welfare. Additionally, our analysis so far controls for the relation between investor protection and performance, as well as welfare and performance. As a further robustness test, we next investigate whether other institutional roadblocks lead to similar results.

Table 11 uses the main regression setup of Table 5 (Columns 4 and 6), replacing labor market regulation with measures of investor protection and economic development. Columns 1 and 2 use the *Anti-self-dealing index* (see Djankov et al. 2008); Columns 3 and 4 consider antidirector rights (La Porta et al. 1998; Djankov et al. 2008). Without time variation in these two measures, the level effects are absorbed by the country fixed effect. Columns 5 and 6 measure economic welfare through the logarithm of GDP per capita. Acknowledging the time variation in GDP, we

include the level effects in these two columns. We find that these roadblocks do not significantly explain the performance difference between family and nonfamily firms.

In sum, this subsection shows that our main result holds for a range of labor market protection measures that are broadly comparable to LMR but that our results are not obtained by merely replacing LMR by other roadblocks. This latter result rules out the prospect that our previous results are an artefact of omitted variables.

5. Conclusion

A large number of publicly traded firms around the world continue to be controlled by families. The performance differential between family- and non-family-controlled firms has been extensively studied, yet only recently has the literature attempted to explain how family control may affect firms' performance through the specific channel of labor relations. This paper provides new evidence on how labor market regulation affects performance differences between family and nonfamily firms. We show that family firms outperform nonfamily firms in countries with weaker labor regulation and that this finding likely results from family firms being better at managing labor in the absence of regulation.

One advantage of our empirical approach is that it uses an international sample to exploit cross-country variation in labor market regulation, while generating a cost, in the sense that our cross-country firm data exhibit limited richness in measurable firm characteristics. While our results indicate that family firms manage labor relations better, we cannot yet pin down the specific channel through which this happens. For this, future work focusing on single countries and drawing on detailed micro data may be especially insightful, for example, analyses of relationship-specific investments made by individual workers in family versus nonfamily firms.

References

Aleksynska, M., and M. Schindler. 2011. Labor market regulation in low-, middle- and high-income countries: A new panel database. *Working Paper, IMF*.

Anderson, R., and D. Reeb. 2003. Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance* 58:1301–28.

Azariadis, C. 1975. Implicit contracts and underemployment equilibria. *Journal of Political Economy* 83:1183–202.

Bach, L., and N. Serrano-Velarde. 2015. CEO identity and labor contracts: Theory and evidence from CEO transitions. *Journal of Corporate Finance* 33:227–42.

Bennedsen, M., and J. Fan. 2014. *The family business map: Assets and roadblocks in long term planning*. New York: Wiley.

Bennedsen, M., J. Fan, M. Jian, and Y. Yeh. 2015. The family business map: Framework, selective survey, and evidence from Chinese family firm succession. *Journal of Corporate Finance* 33:212–26.

Bennedsen, M., and K. Nielsen. 2010. Incentives and entrenchment effects in European ownership. *Journal of Banking and Finance* 34:2212–29.

Bennedsen, M., K. Nielsen, F. Pérez-González, and D. Wolfenzon. 2007. Inside the family firm: The role of families in succession decisions and performance. *Quarterly Journal of Economics* 122:647–91.

Bennedsen, M., F. Pérez-González, and D. Wolfenzon. 2010. The governance of family firms. In *Corporate governance: A synthesis of theory, research and practice*, eds. K. H. Baker and R. Anderson. New York: John Wiley and Sons.

Bertrand, M., and A. Schoar. 2006. The role of family in family firms. *Journal of Economic Perspectives* 20:73–96.

Besley, T., and R. Burgess. 2004. Can labor regulation hinder economic performance? Evidence from India. *Quarterly Journal of Economics* 119:91–134.

Blanchard, O., and F. Giavazzi. 2003. Macroeconomic effects of regulation and deregulation in good and labor markets. *Quarterly Journal of Economics* 118:879–903.

Bloom, N., and J. Van Reenen. 2007. Measuring and explaining management practices across firms and countries. *Quarterly Journal of Economics* 122:1351–408.

Botero, J., S. Djankov, R. La Porta, and Florencio Lopez-de-Silanes, and Andrei Shleifer. 2004. The regulation of labor. *Quarterly Journal of Economics* 119:1339–82.

Davis, J. D. Schoorman, and L. Donaldson. 1997. Toward a stewardship theory of management. *Academy of Management Review* 22:20–47.

Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2008. The law and economics of self-dealing. *Journal of Financial Economics* 88:430–65.

Ellul, A., M. Pagano, and F. Panunzi. 2010. Inheritance law and investment in family firms. *American Economic Review* 100:2414–50.

Ellul, A., M. Pagano, and F. Schivardi. 2018. Employment and wage insurance within firms: Worldwide evidence. *Review of Financial Studies* 31:1298–340.

Faccio, M., and L. Lang. 2002. The ultimate ownership of Western European corporations. *Journal of Financial Economics* 65:365–95.

Franks, J., C. Mayer, P. Volpin, and H. Wagner. 2012. The life cycle of family ownership: International evidence. *Review of Financial Studies* 25:1675–712.

Knight, F. 1921. *Risk, uncertainty, and profit*. Boston, MA: Hart, Schaffner & Marx.

La Porta, R., F. López-de-Silanes, and A. Shleifer. 1999. Corporate ownership around the world. *Journal of Finance* 54:471–517.

La Porta, R, F. López-de-Silanes, A. Shleifer, and R. Vishny. 1998. Law and finance. *Journal of Political Economy* 104:1113–55.

Lansberg, I. 1983. Managing human resources in family firms: The problem of institutional overlap. *Organizational Dynamics* 12:39–46.

———. 1988. The succession conspiracy: understanding resistances to succession planning in first generation family firms. *Family Business Review* 1:119–43.

Lins, K., P. Volpin, and H. Wagner. 2013. Does family control matter? International evidence from the 2008–2009 financial crisis. *Review of Financial Studies* 26:2583–619.

Miller, D., I. Le Breton-Miller, R. Lester, A. A. Cannella. 2007. Are family firms really superior performers? *Journal of Corporate Finance* 13:829–58.

Mueller, H., and T. Philippon. 2011. Family firms and labor relations. *American Economic Journal: Macroeconomics* 3:218–45.

Pérez-González, F. 2006. Inherited control and firm performance. *American Economic Review* 96:1559–88.

Sraer, D., and D. Thesmar. 2007. Performance and behaviour of family firms: Evidence from the French stock market. *Journal of the European Economic Association* 5:709–51.

Tsoutsoura, M. 2013. The effect of succession taxes on family firm investment: Evidence from a natural experiment. *Journal of Finance* 70:649–88.

Villalonga, B., and R. Amit. 2006. How do family ownership, management and control affect firm value? *Journal of Financial Economics* 80:385–417.