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Does it pay to treat employees well? International evidence on the value of employee-friendly culture

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ABSTRACT

We examine the valuation impact of an employee-friendly (*EF*) culture. Using a sample of 3446 firms from 43 countries for the period 2003 to 2014, we show that firms with a more *EF* culture are valued higher and perform better (*ROA*, *ROE*). Consistent with the good governance view, the impact is stronger for firms in countries with better investor protection and for firms with better governance and lower agency costs. We further document a positive valuation associated with the enactment of laws aimed at improving parental leave policies. The impact on valuation stems from improved technical efficiency. Using various approaches, our results suggest that the impact of an *EF* culture on firm value is causal.

1. Introduction

> "*Train people well enough so they can leave, treat them well enough so they don't want to.*"
>
> [*Sir Richard Branson*]

Is there value in creating a more employee-friendly (*EF*) culture? The quote above by Virgin Atlantic's founder signals what could be the start of a global shift in the way firms view and treat employees, raising important questions about efficiency for financial economists to consider. While firms in the tech sector (e.g. Google, Yahoo, Netflix, Microsoft) are well known for offering employees perks that include free meals, generous paid leave packages and in-building fitness and entertainment amenities, in addition to paying competitive wages, such perks have not been as prevalent in other industries.[1] Yet, the media, government agencies, and corporations are beginning to pay closer attention to the treatment of employees. For instance, San Francisco recently became the first city in the United States to pass a law guaranteeing fully paid parental leave, while Virgin Group made headlines recently with its generous paternity leave policy in which new dads get up to 12 months paid leave.[2] Are these firms following value-maximizing objectives when they offer employees perks like free meals and in-building fitness amenities? Or are these costs simply unnecessary extravagances that come at the expense of shareholders? To date, the evidence on this issue is limited.[3]

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[1] See a recent article by Forbes (http://www.forbes.com/sites/karstenstrauss/2013/05/31/how-to-keep-employeeshappy-and-to-just-plain-keep-them/).
[2] Tuttle, Brad, "Virgin's New Paternity Leave Policy Puts Google and Facebook to Shame." *Money* 10 June 2015.
[3] Using the KLD STATS database, Ghaly et al. (2015) provide evidence that treating employees better is associated with a greater desire by the firm to hold cash.

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We study whether, in general, there are financial benefits to a firm by having an employee-friendly culture. There are two competing views on whether policies that create a more *EF* culture are value enhancing, and the evidence to date is relatively scarce and mixed.[4] The good governance view argues that employee treatment is value enhancing. Building on the reciprocity view (Akerlof, 1982), by treating employees well managers may motivate workers to exert high effort, which should lead to improved performance and valuation. Edmans (2011), and Edmans et al. (2015), provide indirect evidence consistent with the good governance (and reciprocity) view and document that employee satisfaction is associated with superior long-term returns and valuation in countries with flexible labor markets. On the other hand, the agency view, based on the agency theory of the firm (Jensen and Meckling, 1976), argues that employee treatment may be driven by ulterior motives due to misalignment of managerial and shareholder incentives, and thus be value destroying (Pagano and Volpin, 2005). Consistent with the agency view, Cronqvist et al. (2009) find evidence that entrenched managers pay their workers more to enjoy private benefits (e.g. lower effort wage bargaining). Landier et al. (2009) also document that geographic dispersion is inversely related to employee treatment, and further find that divisions that are closer to headquarters are less likely to experience layoffs, and that such layoffs are less sensitive to divisional performance.

There is also evidence that employee treatment affects a firm's capital structure (Bae et al., 2011) and the level of corporate innovation (Chen et al., 2016; Mao and Weathers, 2015). A related literature documents a positive impact of employee stock ownership programs on productivity and innovation (Kim and Ouimet, 2014; Chang et al., 2015). Studies that directly assess the impact of employee treatment on firm value and performance have focused primarily on the impact of compensation, yielding mixed evidence. There is some evidence that higher wages are tied to superior performance (e.g. Mas, 2006; Propper and Van Reenen, 2010; Ouimet and Simintzi, 2015), yet other studies show that managers may derive private benefits by paying higher wages, leading to suboptimal outcomes (Pagano and Volpin, 2005; Cronqvist et al., 2009; Landier et al., 2009). Based on the conflicting views and mixed evidence, the question of whether having an *EF* culture is value enhancing is an empirical matter.

In this paper, we build on the existing literature by exploring the valuation consequences of an *EF* culture and by examining the conditions in which an *EF* culture is value enhancing. To do so we use a comprehensive measure of employee treatment for a large sample of firms covering 43 countries using data from Thomson Reuters' ASSET4 database (ASSET4). Using a broad sample of 3446 firms in 43 countries from 2003 to 2014, we show that firms with a higher *EF* culture are valued higher (higher Tobin's *q* and market-to-book) and perform better (higher return on assets, *ROA*, and return on equity, *ROE*). We test the *good governance* and the *agency views* on the valuation consequences of an *EF* culture by using various ex ante proxies of agency problems, including country-level investor protection, firm-level governance, corporate policies related to the free cash flow problem (Jensen, 1986), and managerial compensation structure (Ferrell et al., 2016). Consistent with the *good governance view*, we find that the impact of an *EF* culture on firm value is stronger for firms with fewer agency problems that may lead to a misalignment of managerial and shareholders' incentives. Further, we explore the channels through which an *EF* culture may impact firm value. Our results indicate that higher *EF* culture firms have higher sales-to-assets, lower costs, and have a greater number of patents. These findings support the *good governance* and *reciprocity* views that argue that treating employees well leads them to reciprocate by exerting high effort. The findings on patents lend support to Chen et al. (2016) and Mao and Weathers (2015) who document a positive impact of employee treatment on innovation for a sample of US firms.

Our study faces at least two problems related to identification. First, reverse causality is a concern because firms that are more profitable may be able to invest more in their employees, which results in a more *EF* culture. One aspect that may mitigate such concern is the fact that economic theories suggest that a firm's culture is specific to the firm and is largely fixed over long periods (see e.g. Lazear, 1995; Kreps, 1990). Second, there could be endogeneity bias caused by omitted variables. If the omitted variable impacts both firm value and a firm's ability to create an *EF* culture, our measure of employee-friendliness would not be exogenous to firm value, and the coefficients from OLS regressions would be biased and inconsistent.

We perform several tests to alleviate these concerns. First, we use an instrumental variables approach and project our measure of *EF* culture on two variables that capture a country's culture, borrowing from Hofstede (1980).[5] Specifically, we use two cultural dimensions: Masculinity vs Femininity (*Masculinity*) and Indulgence vs. Restraint (*Indulgence*). The identifying assumption is that cultural values in a country may shape how firms treat employees, but should not have a direct impact on firm performance, other than through their impact on employee treatment.[6] Using a Two-stage Least Squares (2SLS) approach, we continue to find that firms with greater *EF* culture have higher firm value. Second, we examine the causal effect between changes in Tobin's *q* and changes in employee-friendliness to directly address the reverse causality concerns. The results show that while there is a causal effect of changes in employee-friendliness on Tobin's *q*, past changes in Tobin's *q* have no significant impact on employee-friendliness. Third, we explore two quasi-natural experiments to examine the causal effect of employee-friendliness on firm value. We first test the differential impact on firm value for firms with high and low *EF* culture after a shock to economic activity and employment using the global financial crisis as an exogenous shock. We find that firms with greater *EF* culture prior to the crisis are valued higher during and after the crisis. We also assess whether treating employees well creates value by exploiting the staggered implementation of parental leave laws across several European countries during our sample period. Using a difference-in differences (DiD) methodology, we find that the enactment of these parental leave laws is associated with positive valuation ef-

[4] Similar views arise within the broader corporate social responsibility (CSR) literature (see e.g. Ferrell et al., 2016; Liang and Renneboog, 2017; Adhikari, 2016).

[5] In the finance literature, various aspects of Hofstede's (1980) cultural dimensions have been shown to influence momentum strategies (Chui et al. (2010)), stock price synchronicity (Eun et al. (2015)), and firms' use of external finance to fund growth (Boubakri and Saffar (2016)), among others. Karolyi (2016) provides a review of the literature on culture and finance.

[6] A recent paper by Griffin et al. (2017) show that national culture (this includes individualism and uncertainty avoidance) explains a large portion of a firm's culture through its governance.

fects, especially for firms that are most likely to have been impacted by the enactment of these laws (i.e. the firms with poor parental leave policies prior to the enactment of the laws).[7] In all of ours tests, we continue to find that a more *EF* culture is associated with higher valuation, providing further support to our main findings.

Our paper adds to the literature on the impact of culture on firm performance (e.g., Guiso et al., 2015; Edmans, 2011; Edmans et al., 2015). Until recently, finance research has traditionally eschewed culture as an important determinant of financial decision-making (Karolyi, 2016). We contribute to this literature by exploring the valuation consequences of adopting an *EF* culture and by examining the conditions in which such culture is value enhancing. In doing so, we expand on prior studies by using a broad sample of firms from a large number of countries, which allows us to more carefully explore how country and firm-level characteristics can affect the impact of an *EF* culture on firm value. Unlike other studies in the literature, we use a shock-based design in some tests, to better establish causality in the EF culture-firm value relation. We show that an *EF* culture can add value, especially for firms with better governance and those in countries with better investor protection, where managerial and shareholders' incentives are more likely to be aligned. We further contribute to this literature by examining the channels through which an *EF* culture impact firm performance and value. We show that firms with a more *EF* culture have better technical efficiency. Our findings add further support to theories that emphasize the importance of employees as key assets in organizations (see e.g. Rajan and Zingales, 1998; Berk et al., 2010; Carlin and Gervais, 2009).

By studying the valuation impact of employee treatment, our study also contributes to the literature that examines the impact of employee treatment on capital structure (Bae et al. (2011)) and corporate innovation (Chang et al. (2015)), and to studies that analyze the impact of employee stock ownership programs (Kim and Ouimet, 2014). We contribute to this literature by assessing the extent to which an *EF* culture creates firm value. Importantly, we also examine the channels through which an *EF* culture adds value by exploring whether an *EF* culture affects technical efficiency and innovation. We further examine how country and firm characteristics related to the extent of agency costs affect the valuation impact of an *EF* culture.

Finally, we also contribute to the broader debate about corporate social responsibility (CSR) and whether certain CSR activities are consistent with value maximization (see e.g. Ferrell et al., 2016; Bénabou and Tirole, 2010; Krüger, 2015).[8] We shed some light on this debate by showing how an important component of CSR, employee treatment, is value enhancing and by exploring the channels through which (and the conditions in which) employee treatment can affect firm value.

The paper proceeds as follows. In Section 2 we develop our hypotheses. In Section 3 we discuss the data and the methodology used in our study. In Section 4 we present our main results on the relation between *EF* culture and firm value and explore the channel for the valuation gain from having a higher *EF* culture. In Section 5 we provide robustness results and we conclude in Section 6.

2. Hypotheses development

The reciprocity view (Akerlof, 1982) argues that treating employees well (paying high wages) may motivate workers to reciprocate that treatment by exerting high effort. This implies that treating employees well by creating an *EF* culture may be value enhancing. Underlying this argument is a view (the good governance view) that argues that managers adopt policies to create an *EF* culture with the objective to maximize shareholder value. In line with this good governance view, Ferrell et al. (2016) find evidence that managers pursue value maximization strategies when setting CSR policies (e.g. setting environmental policies; improving community relations). Ferrell et al. (2016) document that firms with fewer agency problems tend to engage more in CSR activities and provide some evidence that such activities attenuate the adverse impact of managerial entrenchment on firm value. Edmans et al. (2015) also document that employee satisfaction is associated with higher long-run returns and firm value for firms in countries with more labor flexibility. While they do not assess the impact of agency problems, their results are consistent with the good governance view. Several studies also find a positive link between above-market compensation and worker productivity (e.g. Cappelli and Chauvin, 1991; Holzer et al., 1991; Mas, 2006; Propper and Van Reenen, 2010; Ouimet and Simintzi, 2015), which is consistent with both the reciprocity and the good governance views.

In contrast to the good governance view, the agency view argues that managers may treat employees well to derive private benefits, which could be value destroying. Agency problems may lead managers to pursue value-destroying activities (Jensen and Meckling, 1976; Gormley and Matsa, 2016). As argued by Pagano and Volpin (2005), managers may have an incentive to offer generous wages (i.e. treat employees well) without monitoring workers closely in an attempt to avert hostile takeovers, or to quiet potential whistleblowers. Consistent with this view, several studies document that agency problems lead managers to pay employees more. Cronqvist et al. (2009) show that entrenched managers pay workers more to achieve private benefits that include lower effort in labor and wage negotiations and better relations with their employees. Landier et al. (2009) find that employee treatment is inversely associated with geographic dispersion. They find that layoffs are lower and less sensitive to performance for divisions that are closer to headquarters. Landier et al. (2009) argue that social factors associated with the proximity between employees and managers (e.g. reluctance to "fire neighbor employees") may lead to a misalignment of managerial and shareholder incentives. Taken together, the above theories and mixed evidence suggest that the impact of an *EF* culture on firm value is an empirical matter. We state our main hypothesis in line with the governance view:

H1. An EF culture has a positive impact on firm value.

[7] The quality of maternity and parental leave policies is a component of the Diversity category that is part of the ASSET4 database's Social score that measures social performance. We thus classify firms as most impacted by parental leave laws as those with a Diversity index in the bottom quartile in their country as of the year prior to the implementation of the law in the country.

[8] Among others, El Ghoul et al. (2017) find that CSR leads to greater firm value in countries with less developed markets.

While the average impact of an *EF* culture on firm value is uncertain, the above theories suggest that the impact of an *EF* culture on firm value may depend on the extent of agency problems (i.e. the extent to which managers' and shareholders' incentives are aligned). Thus, even if having an *EF* culture is value increasing on average, agency costs may prevent some managers from adopting or implementing optimal policies. Managers' incentives are likely to be better aligned with those of shareholders in countries with stronger legal protection of investors' rights, where existing evidence has shown that firms have easier access to capital and are valued higher (e.g. La Porta et al., 1997, 2002). In addition to country-level investor protection, good corporate governance at the firm level has been shown to mitigate agency problems and increase firm value (e.g. Gompers et al., 2003; Aggarwal et al., 2009). The adoption of policies to create an *EF* culture is more likely to be driven by value-maximizing objectives in firms with better governance (fewer agency problems). Building on these ideas, we formulate our next set of hypotheses:

H2a. The positive impact of an EF culture on firm value should be stronger in countries with stronger investor protection.

H2b. The positive impact of an EF culture on firm value should be stronger in firms with fewer agency problems.

To test the above hypotheses, we use both country level proxies of investor protection as well as firm level proxies of governance and agency costs. First, we use various commonly used proxies of investor protection, derived from the law and finance literature (see e.g. La Porta et al., 1998). Specifically, we use: 1) *Common law* – an indicator variable for countries with English law origin of commercial laws (La Porta et al., 1998). 2) *ASDI* – the anti-self-dealing index from Djankov et al. (2008), and 3) *Investor protection* (*IP*) –the principal component of disclosure requirements, liability standards, and anti-director rights disclosure rights, from La Porta et al. (2006). Next, to assess the extent of agency problems within firms, we first examine the impact of firm-level governance using three proxies of firm-level governance: 1) *Governance index* – the score on the governance component of ASSET4; 2) *GOV Index* – the governance index from Aggarwal et al., 2009), and 3) *Board independence* – the percentage of independent directors. In addition to firm-level governance, we also examine several additional proxies of agency costs. To this end, we rely on the existing corporate finance literature and use various proxies of agency costs related to firm's financial policies associated with the free cash flow problem (Jensen, 1986), as well as CEO compensation arrangements. Agency problems are exacerbated when firms have excess free cash flows (Jensen and Meckling, 1976; Jensen, 1986), while dividends may act as a disciplining mechanism for managers (La Porta et al., 2000; Jensen, 1986). In addition, managers whose pay is tied to performance are more likely to pursue value-maximizing objectives because their interests are better aligned with those of shareholders (see e.g. Masulis et al., 2009). We use three proxies for agency costs: *Cash-to-assets*; *Dividend payout ratio*, and *Pay-for performance* – an indicator variable for firms in which CEO pay is tied to total shareholder return from ASSET4, following Ferrell et al. (2016).

3. Data and methodology

3.1. Measure of employee-friendliness

We measure an *EF* culture by focusing on how a firm treats its current employees. To do so, we rely on questions and attributes of social performance using data from the ASSET4 database. Specifically, we focus on the following five categories: 1) *Employment quality* – measures a company's management commitment and effectiveness towards providing high-quality employment benefits and job conditions; 2) *Health and safety* – measures a company's management commitment and effectiveness towards providing a healthy and safe workplace; 3) *Training* – measures a company's management commitment and effectiveness towards providing training and development (education) for its workforce; 4) *Diversity* – measures a company's management commitment and effectiveness towards maintaining diversity and equal opportunities in its workforce, and 5) *Human rights* – measures a company's management commitment and effectiveness towards respecting the fundamental human rights conventions. At first glance, it could be argued that the *Human rights* component does not capture a firm's *EF* culture, especially in more developed countries where basic human rights are protected. However, this may not be the case for firms in less developed countries, where human rights violations are not uncommon (e.g. Wernau, 2015). In addition, many large companies (e.g. GAP; Walmart) have been involved in scandals related to human rights (child labor) violations (see e.g. Brown, 2007; Smith, 2016). We thus keep the human rights component in our primary measure of *EF index*. In robustness tests, we exclude the human rights component from our *EF index* measure and obtain similar results.

While ASSET4 provides its own aggregate scores for each of these categories, we construct our own firm-level index (*EF-Index*) using various attributes, although we validate our main results using the scores from ASSET4. While our choice of variables is admittedly arbitrary, this approach is more transparent and allows us to more closely examine important questions such as when and what factors are important determinants of the impact of *EF* culture on firm value and performance. In addition, by constructing our own firm-level measure we apply a consistent standard to all firms in our sample. Our index construction parallels the construction of the firm-level governance index by Aggarwal et al. (2009). To alleviate concerns about the validity of our measure, we also use an alternate index that is based on the scores in each of the above five categories provided by ASSET4. Specifically, our alternate index, *EF index ASSET4*, is the average of the scores on the five categories from ASSET4.[9]

We have a total of 32 employee-treatment attributes covering five categories: *Employment quality* (seven attributes); *Diversity* (eight attributes); *Training* (six attributes); *Health and safety* (five attributes), and *Human rights* (six attributes). For each of the 32 attributes, our index takes the value of one if the company meets the criteria, and zero otherwise. In the case in which the attribute is a number (e.g.

[9] ASSET4 assigns scores (0−100) to each component of the five components of the social score: Employment quality; Diversity; Training; Health and Safety, and Human Rights. These are based on multiple factors (questions) within each category. Higher values are associated with better employee treatment.

percentage of women managers), the index takes the value of one if the value is above (or below) the industry median and zero otherwise.[10] We create an index for each of the five categories, expressed as a percentage, with a maximum value of 100% if a firm meets all the available criteria in each category. Similarly, we compute the aggregate index of employee-friendliness, *EF-Index*, with a maximum value of 100% if a firm meets all 32 attributes. For firms that have missing attributes, we compute each index based on the percentage of all non-missing attributes that a firm satisfies. Appendix B shows the attributes used to create the index for each category as well as the percentage of firms in our sample that satisfy each attribute. The indices are computed annually for each firm.

In terms of *Employment quality*, from Appendix B we observe that very few firms in our sample experience strikes that lead to lost working days, and only 10.8% of our firms have been included in the "Best Companies to Work For" list. The latter suggests that our index of employee-friendliness is a broader measure than the one typically used in prior studies, as it covers additional areas and firms that go beyond the inclusion in the "Best Companies to Work For" lists. Assessing the *Diversity* component, about 74% of our firms have a diversity policy, while the proportion of women managers is higher than the industry median for about 44% of the firms in our sample. For *Training*, we observe that about 62% of the companies in our sample have policies that support skills training of their employees, while only 7.8% of the companies provide training to its suppliers. In terms of *Health and safety*, 55.4% of companies establish targets or objectives on employee health and safety. Finally, looking at the *Human rights* component, we observe that only 33.1% of our firms have a general policy regarding human rights, and only 11.9% monitor human rights in its suppliers. The proportion of firms meeting the *Human rights* criteria is the lowest among all five categories.

3.2. Sample description and descriptive statistics

Our initial sample consists of all firms covered by ASSET4 database from 2002 through 2014 with available data on the five key categories of social performance. The database covers a subset of firms from Thompson Reuter's DataStream and WorldScope.[11] The database coverage varies by country, with coverage of developed markets starting in 2002, while some emerging markets begin coverage in 2007 or beyond. Our initial sample consists of 5006 firms from 67 countries. We exclude firms with missing values for total assets, as well as those with negative sales or negative book value of equity. We proceed with our screening by excluding firms from regulated industries (financials – SIC codes between 6000 and 6999 and utilities – firms with SIC codes between 4900 and 4949) and those with missing values on our control variables. Finally, we exclude countries with fewer than three years of available data and those with fewer than three firms.[12] To mitigate the influence of outliers we winsorize all variables at the top and bottom 1% of the distribution. While the ASSET4 database coverage starts in 2002, our sample period starts in 2003 because we use lagged measures of the *EF index* in our analyses. Our final sample consists of 3446 firms from 43 countries totaling 21,103 firm-year observations. In addition to the firm-level data, we collect country-level data from various sources. We obtain data on financial development and economic growth from the World Bank Development Indicators. All variables are defined in Appendix A.

Table 1 shows a description of our sample. Our sample is geographically diverse. Firms from the US (842), Japan (351), Australia (307), and the United Kingdom (298) comprise about half of our sample (52.2%). Our sample is comprised of large firms, covering about 87% of the total market capitalization of all firms (excluding financials and utilities) covered by WorldScope as of 2014.

Table 2 shows descriptive statistics of our main firm- and country-level variables. Firms in our sample are large, with average (median) total assets of $4.7 billion ($4.5 billion). The average (median) Tobin's *q* is 1.8 (1.4). The average (median) *EF index* is 38.6 (36.8) with a standard deviation of 21.2.

Table 3 shows the pairwise correlation coefficients between all our variables of interest. Notably, the results show a strong correlation between the *EF index* and many of the other variables. While there is a negative correlation between *EF index* and Tobin's *q*, the *EF index* displays a positive correlation with firm size, age, percentage of foreign sales, profitability (*ROA and ROE*), and the cross-listing indicator, and a negative correlation with cash holdings, the percentage of closely-held shares, and the level of capital expenditures-to-assets. Many of the other variables also display unsurprising correlations, but none of these correlations is high enough to suggest a multicollinearity issue.

4. Results

4.1. Employee-friendliness and firm value

We first examine whether having an *EF* culture is associated with higher firm value. The primary regression specification is a standard OLS regression using Tobin's *q* (market value of assets-to-book value of assets) as our main proxy for firm value. Our regressions include several firm-level, country-level, and industry-level control variables used in prior research to explain Tobin's *q* (Aggarwal et al., 2009; Gompers et al., 2010; Doidge et al., 2004). Specifically, we include the following firm-level control variables: (1) *Size*, measured as the log of book value of assets; (2) *Age*, the log of firm age; (3) *Leverage*, debt divided by total assets; (4) *Cash*, cash divided by total assets; (5) *PPE-to-sales*, property, plant, and equipment divided by sales; (6) *Foreign sales*, the two-year average foreign sales divided by

[10] We use the 2-digit SIC code to determine the median industry values.

[11] The ASSET4 universe covers over 5000 firms from major indices including *Msc*I Emerging Markets, *Msc*I World, CAC40, DAX, FTSE250, S&P 500, NASDAQ 100, STOXX 600, ASX 300, SMI, and Bovespa.

[12] The following countries were dropped from our sample because of data availability: Cayman Islands, Cyprus, Czech Republic, Gibraltar, Hungary, Iceland, Isle of Man, Jordan, Kazakhstan, Kuwait, Macau, Morocco, Nigeria, Oman, Panama, Papua New Guinea, Peru, Puerto Rico, Qatar, Saudi Arabia, Sri Lanka, Ukraine, United Arab Emirates, and Zimbabwe. Firms from these countries (74) represent about 2.1% of our final sample.

Table 1
Sample distribution across countries.
The table reports the number of firms, total number of observations, and the first year of available data for firms in the country. Our sample includes all firms covered by Thomson Reuters' ASSET4 database. We exclude financial firms and utilities (SIC codes between 6000 and 6999 and between 4900 and 4949) and firms with missing data on total assets, as well as those with negative sales or negative book value of equity. We require countries to have three years of data on at least three firms. Our sample consists of 3446 firms (21,103 firm-year observations) from 43 countries from 2003 through 2014.

Country	First year	# of firms	# of observations
Australia	2003	307	1312
Austria	2003	13	104
Belgium	2003	18	141
Bermuda	2005	10	49
Brazil	2008	58	201
Canada	2003	240	1233
Chile	2009	12	61
China	2005	119	478
Colombia	2011	5	16
Denmark	2003	21	173
Egypt	2012	8	20
Finland	2003	25	223
France	2003	82	692
Germany	2003	76	485
Greece	2003	15	79
Hong Kong	2003	86	511
India	2008	64	257
Indonesia	2009	25	80
Ireland	2003	28	212
Israel	2010	11	39
Italy	2003	27	219
Japan	2003	351	2806
Luxembourg	2005	9	55
Malaysia	2009	34	110
Mexico	2009	27	64
Netherlands	2003	40	237
New Zealand	2005	10	65
Norway	2003	17	149
Philippines	2011	9	24
Poland	2010	12	41
Portugal	2003	8	68
Russian Federation	2008	28	135
Singapore	2005	40	273
South Africa	2009	95	263
South Korea	2005	86	353
Spain	2003	30	232
Sweden	2003	42	355
Switzerland	2003	63	486
Taiwan	2009	118	473
Thailand	2009	20	71
Turkey	2009	17	67
United Kingdom	2003	298	2102
United States	2003	842	6089
TOTAL		3446	21,103

sales; (7) *RD-to-sales*, the two-year average research and development expenses divided by sales; (8) *Capex-to-assets*, capital expenditures divided by total assets; (9) *ROA*, net income divided by book value of assets; (1) *Closely-held*, the percentage of a firm's shares that are closely held, and (11) *ADR*, a variable indicating firms cross-listed on U.S. stock exchanges. To control for patterns over time by country and industry, we include country-year and industry-year fixed effects in our baseline regressions. In specifications in which we exclude country-year fixed effects, we include the log of annual GDP per capita (*Log GDP* per capita) and the growth rate of real GDP (*GDP Growth*) to control for financial development and growth. All control variables are lagged one year. We use the following model to test the effect of *EF* culture on firm value:

$$q_{it} = \alpha + \beta_1 EF_{i,t-1} + \sum \beta_m Controls_{i,t-1} + \mu_{ct} + \delta_{jt} + \varepsilon_{it}, \quad (1)$$

EF refers to our proxies for *EF* culture, *EF index* or *EF index ASSET4*; *Controls* refers to the firm-level control variables, and μ_{ct} and δ_{jt} refer to country-year and industry-year fixed effects, respectively. Per our main hypothesis (Hypothesis H1), our variable of interest is the coefficient on β_1 and we expect this to be positive and significant if an *EF* culture is associated with positive valuation consequences. Consistent with the reciprocity and the good governance views, the results in Panel A of Table 4 show evidence of a positive and significant coefficient on β_1, suggesting that firms with more *EF* culture have higher Tobin's *q*. The results

Table 2
Descriptive statistics.
The table shows descriptive statistics for our main variables. Our sample consists of 3446 firms (21,103 firm-year observations) from 43 countries from 2003 through 2014. Financial and stock market data are obtained from Thomson's WorldScope and DataStream. Data on our measures of employee-friendliness are obtained from ASSET4 database. Variable definitions are found in Appendix A.

	Descriptive statistics					
	N	Mean	25th. pctl.	Median	75 t pctl.	Std. dev.
Firm-level variables						
EF index %	21,103	38.58	21.05	36.84	55.56	21.18
EF index-ASSET4%	21,103	51.65	31.43	51.71	71.94	23.71
Employment quality (%)	21,103	33.46	25.00	25.00	42.86	14.35
Training (%)	21,103	40.47	25.00	50.00	50.00	28.20
Diversity (%)	21,103	49.19	33.33	50.00	66.67	30.03
Health and safety (%)	21,103	45.25	0.00	50.00	75.00	36.95
Human rights (%)	21,103	32.00	0.00	16.67	66.67	36.75
Tobin's *q*	21,103	1.80	1.11	1.44	2.07	1.12
Size	21,103	22.27	21.38	22.22	23.17	1.38
Log Age	21,103	3.03	2.48	2.94	3.56	0.86
Leverage	21,103	23.09	10.56	22.28	33.40	15.98
Cash-to-assets %	21,103	8.05	1.65	5.21	11.37	8.91
PP&E-to-sales %	21,103	113.06	28.95	57.32	122.10	169.42
Foreign sales-to-sales %	21,103	37.31	1.50	33.73	64.05	32.56
R&D expenses-to-sales	21,103	2.49	0.00	0.04	2.40	5.27
Capex-to-assets %	21,103	5.78	2.19	4.16	7.35	5.47
ROA %	20,988	6.52	3.02	6.17	10.16	8.21
ROE %	20,931	13.57	5.49	12.64	21.17	22.82
Closely-Held %	21,103	25.61	3.46	19.51	42.73	23.46
ADR	21,103	0.19	0.00	0.00	0.00	0.40
Country-level variables						
Log GDP per capita	21,103	10.50	10.49	10.70	10.82	0.65
GDP growth	21,103	1.90	1.12	2.19	2.88	2.69

are both statistically and economically significant. For example, using the coefficient in Model (2), a one-standard-deviation increase in the *EF index* (21.2 – from Table 2) is associated with a 4.8% increase in Tobin's *q*.[13]

We examine the robustness of our results by estimating various specifications of Eq. (1) in Panel A of Table 4. In Model (1) we control for country, industry, and year fixed effects and include *Log GDP* per capita and *GDP growth* to control for financial development and growth. In Model (2) we include country-year and industry-year fixed effects to control for plausible patterns in employee-friendliness over time by country and industry. In Model (3) we show results including firm and year fixed effects to better control for time invariant firm-specific characteristics. The magnitude of the coefficient on *EF index* is much smaller when using firm fixed effects, which suggests that the impact on Tobin's *q* is driven mostly by cross-sectional variation in our *EF index*. In Models (4)–(6), we replicate our results using our alternate measure of *EF culture*, *EF index ASSET4*, derived from the component scores from the ASSET4 database. The results using the alternate measure of employee-friendliness are similar in statistical significance, but slightly larger in economic magnitude compared to our main measure, *EF index*. From Model (5) in Panel A of Table 4, a one-standard-deviation increase in *EF index ASSET4* (23.71) is associated with a 5.0% increase in Tobin's *q*.[14] The coefficient on *EF index ASSET4* is positive but insignificant when we include firm and year fixed effects (in Model (6)). Given that Fig. 1 shows there is little time-series variation in the broader *EF index ASSET4* relative to our main index *EF index*, it is not surprising the lack of (or weak) significance of our results when using firm and year fixed effects. These indices are proxies for firms' *EF* culture; economic theories suggest that a firm's culture is specific to the firm and is largely fixed over long periods (see e.g. Lazear, 1995; Kreps, 1990). While such culture can be changed, this process takes time; as such, we expect our results to be driven primarily by cross-sectional differences in *EF* culture.

In Panel B of Table 4, we examine the impact of the individual components of the *EF index*, based on: 1) *Employment quality*; 2) *Health and safety*; 3) *Training*; 4) *Diversity*, and 5) *Human rights*. The results in Panel B show that except for the *Health and safety index*, all other components of the *EF index* have a positive and significant impact on Tobin's *q*.[15] In terms of economic magnitude, *Human rights* and *Training* have the largest impact. A one-standard-deviation increase in *Human rights* (36.75) is associated with a 4.7% increase in Tobin's *q*, while a one-standard deviation increase in *Training* (28.2) is associated with a 3.3% increase in Tobin's *q*.[16] These results suggest that our

[13] The coefficient on *EF index* in Model (2) of Panel A of Table 4 is 0.0041. Thus, a one-standard-deviation increase in *EF index* (21.18) is associated with a 0.087 (21.18 × 0.0041) increase in Tobin's *q*, which represents a 4.8% increase (0.087/1.80).

[14] The coefficient on *EF-index ASSET4* in Model (5) of Table 4 is 0.0038. Thus, a one-standard-deviation increase in *EF-index ASSET4* (23.71) is associated with a 0.090 (23.71 × 0.0038) increase in Tobin's *q*, which represents a 5.0% increase (0.09/1.80).

[15] One plausible explanation for the lack of significance of the *HS index* is that health and safety concerns are of critical importance only in a few industries (e.g. construction; oil exploration). As such, the average effect of the *HS index* dissipates when including industries that place less emphasis on this component.

[16] Based on the coefficient on *Human rights* (0.0023) in Model (5) of Panel B of Table 4, a one-standard deviation increase in *Human rights* (36.75) is associated with a 0.085 increase in Tobin's *q*, which represents a 4.7% increase (0.085/1.8). Similarly, based on the coefficient on *Training* (0.0021) in Model (3) of Panel B, a one-standard deviation increase in *Training* (28.2) is associated with a 0.059 increase in Tobin's *q*, which represents a 3.3% increase (0.059/1.8).

Table 3
Correlations.
The table shows correlation among variables used in our analysis. * indicates that the correlation is significant at least at the 10% level. See Appendix A for variable definitions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1)	1																				
(2)	0.83*	1																			
(3)	0.46*	0.38*	1																		
(4)	0.78*	0.72*	0.32*	1																	
(5)	0.66*	0.50*	0.17*	0.40*	1																
(6)	0.71*	0.55*	0.20*	0.48*	0.50*	1															
(7)	0.85*	0.72*	0.28*	0.57*	0.38*	0.46*	1														
(8)	−0.06*	−0.04*	0.03*	−0.06*	−0.02*	−0.12*	−0.04*	1													
(9)	0.01*	0.06*	0.05*	0.04*	−0.03*	−0.05*	0.02*	0.51*	1												
(10)	0.04*	0.09*	0.05*	0.06*	0.00	−0.02*	0.05*	0.39*	0.82*	1											
(11)	0.37*	0.45*	0.11*	0.33*	0.19*	0.20*	0.38*	−0.29*	−0.07*	−0.01*	1										
(12)	0.17*	0.18*	0.04*	0.11*	0.17*	0.12*	0.15*	−0.02*	0.03*	0.05*	0.16*	1									
(13)	0.03*	0.05*	−0.02*	0.03*	0.03*	0.05*	0.03*	−0.24*	−0.13*	0.01	0.26*	0.00	1								
(14)	−0.07*	−0.10*	0.00	−0.05*	−0.08*	−0.07*	−0.05*	0.21*	0.07*	0.03*	−0.21*	−0.10*	−0.28*	1							
(15)	−0.07*	−0.10*	−0.03*	−0.10*	−0.01	0.03*	−0.10*	−0.12*	−0.23*	−0.20*	−0.07*	−0.09*	0.10*	−0.10*	1						
(16)	0.27*	0.27*	0.10*	0.21*	0.12*	0.17*	0.30*	0.02*	0.02*	0.00	0.10*	0.05*	−0.05*	0.11*	−0.10*	1					
(17)	0.01	0.03*	0.01*	−0.02*	0.09*	−0.03*	0.01	0.22*	−0.03*	−0.07*	−0.05*	0.02*	−0.19*	0.24*	−0.09*	0.20*	1				
(18)	−0.02*	−0.04*	−0.01*	−0.03*	−0.01	0.05*	−0.04*	0.02*	−0.01	−0.03*	−0.09*	−0.10*	0.04*	−0.09*	0.41*	−0.05*	−0.16*	1			
(19)	−0.12*	−0.10*	−0.02*	−0.01*	−0.22*	−0.11*	−0.08*	0.00	0.03*	−0.01	−0.05*	−0.25*	0.02*	0.03*	0.04*	−0.08*	−0.13*	0.06*	1		
(20)	0.20*	0.27*	0.07*	0.20*	0.04*	0.10*	0.22*	−0.07*	−0.01	0.00	0.25*	0.06*	0.05*	−0.01	0.02*	0.19*	0.01	0.02*	0.09*	1	
(21)	0.02*	0.00	0.01*	−0.10*	0.21*	0.02*	−0.04*	−0.04*	−0.09*	−0.05*	−0.05*	0.13*	−0.03*	0.01*	0.03*	0.14*	0.12*	−0.06*	−0.38*	−0.10*	1
(22)	−0.14*	−0.10*	−0.05*	−0.08*	−0.17*	−0.13*	−0.09*	0.12*	0.13*	0.10*	−0.04*	−0.05*	−0.02*	0.03*	0.04*	−0.06*	−0.04*	0.02*	0.15*	0.00	−0.35*

(1) *EF index*
(2) *Social score %*
(3) *Employment quality* (%)
(4) *Training* (%)
(5) *Diversity* (%)
(6) *Health and safety* (%)
(7) *Human rights* (%)
(8) Tobin's *q*
(9) *ROA %*
(10) *ROE %*
(11) *Size*
(12) *Log Age*
(13) *Leverage*
(14) *Cash-to-assets %*
(15) *PP&E-to-sales %*
(16) *Foreign sales-to-sales %*
(17) *R&D expenses-to-sales*
(18) *Capex-to-assets %*
(19) *Closely-Held %*
(20) *ADR*
(21) *Log GDP* per capita
(22) *GDP growth*

Table 4
The relationship between *EF* culture and firm value.
Panel A presents regression results of the impact of *EF* culture on *Tobin's q*. *EF index* is an index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET 4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*; and 5) *Human rights*. Panel B reports results using the scores on the individual components of the *EF index*. *EF index* ASSET4 is the average of the five component scores from the ASSET4 database. In Panel C, we report results from 2SLS regressions in which we instrument *EF index* (*EF index* ASSET4) using two measures of country culture from Hofstede (1980): 1) *Masculinity* – masculinity versus femininity orientation, and 2) *Indulgence* – captures the extent to which a society allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Panel D shows results from regressions of changes in Tobin's *q* (*EF index*) on lagged changes in *EF index* (Tobin's *q*) and all control variables (measured as changes from *t-1* to *t*) included in Panel A. The control variables (not shown in Panels B-D to conserve space) include: 1) *Size*; 2) *Age*; 3) *Leverage*; 4) *Cash*; 5) *PPE-to-sales*; 6) *Foreign sales*; 7) *RD-to-sales*; 8) *Capex-to-assets*; 9) *Closely-held*; 10) *ADR*; 11) *ROA*; 12) *Log GDP* per capita, and 13) *GDP growth*. In specifications with country-year fixed effects, the country-level variables are subsumed by the country-year fixed effects. In Panel C we report *F*-statistics and *p*-values from the first-stage regressions, Hansen's *J*-statistic for the test of overidentifying restrictions, and *F*-statistics from the Montiel Olea and Pflueger (2013) robust weak instrument test. The last row in Panel D reports *p*-values from Wald tests of the significance of lagged values of Δ*EF index* (Δ Tobin's *q*). *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A – impact of employee-friendliness on firm value

	Dependent variable: Tobin's *q*					
	(1)	(2)	(3)	(4)	(5)	(6)
EF Index$_{t-1}$	0.0033***	0.0041***	0.0014**			
	(6.83)	(5.72)	(2.46)			
EF index-ASSET4$_{t-1}$				0.0032***	0.0038***	0.0004
				(5.87)	(4.88)	(0.55)
Size$_{t-1}$	−0.2141***	−0.2164***	−0.4985***	−0.2200***	−0.2226***	−0.4981***
	(−17.25)	(−17.68)	(−10.59)	(−17.14)	(−17.39)	(−10.33)
Age	−0.0191	−0.0234*	−0.1588*	−0.0197	−0.0248*	−0.1610*
	(−1.43)	(−1.87)	(−1.96)	(−1.45)	(−1.96)	(−1.99)
Leverage$_{t-1}$	−0.0027	−0.0032	−0.0039***	−0.0027	−0.0032	−0.0039***
	(−1.47)	(−1.51)	(−3.51)	(−1.46)	(−1.50)	(−3.52)
Cash$_{t-1}$	0.0131***	0.0125***	0.0058***	0.0133***	0.0126***	0.0059***
	(4.87)	(4.52)	(4.56)	(4.93)	(4.60)	(4.65)
PPE-to-sales$_{t-1}$	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	(0.78)	(1.13)	(1.10)	(0.82)	(1.16)	(1.10)
Foreign sales-to-sales	0.0002	0.0004	−0.0016***	0.0002	0.0004	−0.0016***
	(0.39)	(1.08)	(−2.80)	(0.57)	(1.28)	(−2.71)
RD-to-sales	0.0372***	0.0351***	−0.0024	0.0367***	0.0346***	−0.0025
	(9.78)	(8.72)	(−0.61)	(9.97)	(8.93)	(−0.64)
Capex-to-assets$_{t-1}$	0.0094**	0.0094***	−0.0023	0.0090**	0.0092***	−0.0023
	(2.19)	(3.13)	(−0.99)	(2.11)	(3.09)	(−1.00)
Closely-held	0.0019***	0.0021***	0.0005	0.0019***	0.0021***	0.0005
	(2.77)	(3.20)	(0.67)	(2.78)	(3.27)	(0.64)
ADR	0.0890**	0.0734**		0.0855**	0.0709**	
	(2.21)	(2.09)		(2.17)	(2.04)	
ROA	0.0494***	0.0512***	0.0123***	0.0490***	0.0510***	0.0123***
	(14.56)	(11.92)	(7.87)	(14.55)	(11.94)	(7.84)
Log GDP per Capita	−1.0204***		−0.0761	−0.8995***		−0.0784
	(−6.44)		(−0.40)	(−6.15)		(−0.41)
GDP Growth	0.0460***		0.0143	0.0432***		0.0144
	(5.50)		(1.63)	(5.27)		(1.63)
Country fixed effects	Yes	No	No	Yes	No	No
Industry fixed effects	Yes	No	No	Yes	No	No
Firm fixed effects	No	No	Yes	No	No	Yes
Year fixed effects	Yes	No	Yes	Yes	No	Yes
Country-year fixed effects	No	Yes	No	No	Yes	No
Industry-year fixed effects	No	Yes	No	No	Yes	No
Observations	21,103	21,103	21,103	21,103	21,103	21,103
Adjusted R^2	0.420	0.451	0.777	0.420	0.451	0.777
# countries	43	43	43	43	43	43

Panel B – components of *EF index*

	Dependent variable: Tobin's *q*					
	(1)	(2)	(3)	(4)	(5)	(6)
Employment quality	0.0030*					0.0021
	(1.94)					(1.47)
Training		0.0021***				0.0013***
		(5.24)				(2.97)
Diversity			0.0013**			0.0007
			(2.51)			(1.30)
Health and safety				0.0002		−0.0008***
				(1.07)		(−3.03)
Human rights					0.0023***	0.0020***
					(5.81)	(4.45)

Table 4 *(continued)*

Panel B – components of *EF index*

	Dependent variable: Tobin's *q*					
	(1)	(2)	(3)	(4)	(5)	(6)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,103	21,103	21,103	21,103	21,103	21,103
Adjusted R^2	0.438	0.439	0.438	0.437	0.440	0.442
# countries	43	43	43	43	43	43

Panel C – 2SLS regressions

	First-stage	Second-stage	First-stage	Second-stage
Dependent variable:	*EF index*	Tobin's *q*	*EF index* ASSET4	Tobin's *q*
	(1)	(2)	(3)	(4)
EF index		0.012***		
		(3.12)		
EF index-ASSET4				0.013***
				(3.17)
Masculinity	−0.118***		−0.111***	
	(−3.61)		(−2.97)	
Indulgence	0.237***		0.211***	
	(4.87)		(3.77)	
Controls	Yes	Yes	Yes	Yes
Region-year fixed effects	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	21,015	21,015	21,015	21,015
Adjusted R^2	0.465	0.422	0.407	0.422
# countries	41	41	41	41
1st stage *F*-stat		22.163		12.046
1st stage *F*-statistic *p*-value		0.000		0.000
Hansen *J*-statistic		0.221		0.261
χ^2 test (*p*-value)		0.638		0.610
Effective *F*-statistic (weak instruments)		*21.079***		*13.065***

Panel D – causal effect of employee-friendliness on firm value

Dependent variable:	ΔTobin's $q_{t,-1,t}$		$\Delta EF\ index_{t,-1,t}$	
	(1)	(2)	(3)	(4)
Δ *EF Index*$_{t,t-1}$	0.0010*	0.0007		
	(1.81)	(1.17)		
Δ *EF Index*$_{t-1,t-2}$	0.0010*	0.0008		
	(1.76)	(1.38)		
Δ *EF Index*$_{t-2,t-3}$		0.0009*		
		(1.92)		
Δ Tobin's $q_{t,\ t-1}$			0.1540	0.1160
			(1.61)	(1.17)
Δ Tobin's $q_{t-1,t-2}$			0.0379	0.1820
			(0.47)	(1.52)
Δ Tobin's $q_{t-2,t-3}$				−0.0361
				(−0.56)
Country-year fixed effects	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Observations	17,582	14,388	17,582	14,388
Adjusted R^2	0.206	0.225	0.111	0.128
# countries	43	43	43	43
Wald test - lagged *EF index* (Tobin's *q*) are jointly equal to zero (*p*-value)	0.027	0.031	0.167	0.141

findings are not just a result of firms paying higher wages, nor are they driven by firms that make the list of the "Best Companies to Work for." Note that salaries and the inclusion on the Best Companies to Work for list are subcomponents of *Employment quality*. While *Employment quality* does have a positive impact on firm value, other indices have a more significant impact on Tobin's *q*.[17] In column (6)

[17] Based on the coefficient on *Employment quality* (0.0030) in Model (1) of Panel B, a one-standard deviation increase in *EQ index* (14.35) is associated with a 0.043 increase in Tobin's *q*, which represents a 2.4% increase (0.043/1.8).

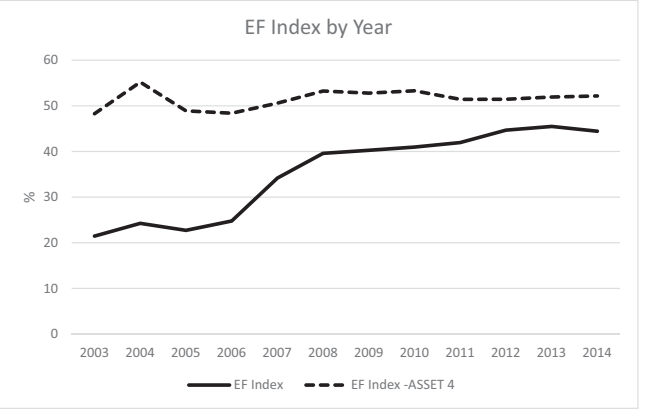

Fig. 1. Employee-friendly (*EF*) culture indices by year. The figure shows the annual average values for our two proxies of employee-friendly culture: 1) *EF index*, and 2) *EF index*-ASSET4. *EF index* is an index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET 4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*, and 5) *Human rights*. *EF index ASSET4* is the average of the five component scores from the ASSET4 database. See Appendix A for variable definitions.

of Panel B Table 4, we show results from regressions including all five of our index components. Only the coefficients on *Training* and *Human rights* remain positive and statistically significant in these regressions; the coefficient on *Health and safety* index switches sign and becomes negative and significant. The high correlation between these variables likely explains the switch in sign of the coefficient on *Health and safety* when we include all variables in the same regression. For example, the correlation between the *Human rights* and *Training* is 0.57.

Overall, the results in Panels A and B of Table 4 lend support to Hypothesis H1 and suggest that an *EF culture is* value enhancing. These results are in line with the good governance view.

4.2. Endogeneity in employee-friendliness and firm value

While our results suggest that an *EF* culture is associated with higher Tobin's *q*, these results do not establish causality. One potential concern deals with reverse causality; firms with higher valuations may be able to spend more on their employees to create a more employee-friendly working environment. In addition, there could be endogeneity bias caused by omitted variables. If the omitted variable impacts both firm value and a firm's ability to invest in *EF* policies, our measure of employee-friendliness would not be exogenous to firm value, and the coefficients from OLS regressions would be biased and inconsistent. While there is no perfect solution to addressing endogeneity, we perform several tests to alleviate these concerns.

4.2.1. Two-stage Least Squares (2SLS) estimation

In this section, we address endogeneity concerns by employing a 2SLS procedure using instrumental variables for our measure of *EF* culture. We use two instruments that measure a country's cultural values from Hofstede (1980). 1) *Masculinity* – a dimension of culture that represents a preference in society for achievement, heroism, assertiveness, and material rewards for success; its opposite, Femininity, stands for a preference for cooperation, modesty, caring for the weak and quality of life; 2) *Indulgence* – stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. While no instrument is perfect, our instruments satisfy both conditions of validity: the relevancy condition and the exclusion restriction (we discuss the tests of validity below). Countries with low values of *Masculinity* have a preference for cooperation, modesty, caring for the weak and quality of life. We expect better employee treatment in countries with lower levels of masculinity. In contrast, societies that score high on *Indulgence* value free gratification of basic and natural human drives related to enjoying life and having fun. We expect better employee treatment in countries that score high on indulgence. While these cultural norms could influence a firm's employment policies, such norms are unlikely to have a direct impact on firm value (the findings in Gómez-Mejia and Palich (1997) support this claim). Our tests of validity suggest that our instruments meet both the relevance and the exclusion restrictions.

Panel C of Table 4 shows results from the instrumental variable (2SLS) regressions. Model (1) shows results from the first-stage OLS regressions using the *EF index* as the dependent variable; we use the predicted values from the first-stage in the second-stage regressions (Model (2)). Because there is no within country variation in our instruments, we do not use country-year fixed effects in the first-stage regressions. Instead, we use region-year and industry-year fixed effects.[18] Our instruments exhibit significant explanatory power

[18] We group countries into regions using the World Bank regions: East Asia and Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, North America, South Asia, and Sub-Saharan Africa.

Table 5
The impact of exogenous shocks on the *EF* culture and the firm value relation.
The table shows various results from OLS regressions of Tobin's *q*. *EF index* is an index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*, and 5) *Human rights*. In Panel A we examine the relative performance following the global financial crisis for firms with *High* (top third) and *Low* (bottom third) *EF index* as of the end of 2006. *Post* is an indicator variable that equals one for years after 2008 and zero otherwise. *Pre* is an indicator that is equal to one for years 2005 and 2006 and zero otherwise. In Models (3) and (4), we include additional interactions with an indicator variable, *High Impact* that is equal to one for countries with above median change in unemployment between 2007 and 2009. In Panel B, we use the enactment of parental leave laws in EU countries as a shock to the diversity component of the employee-friendly index. In Models (1) and (2) of Panel B we show results using interactions between *Treat* - an indicator variable that is equal to one for firms in countries that enacted parental laws during our sample period and zero otherwise. Our control group includes all firms from countries that did not adopt parental leave laws during our sample period. *Post* is an indicator that is equal tone for years starting after the enactment of the parental leave laws in the country and zero otherwise. We set *Post* equal to zero for our control group. *Pre* is an indicator variable that is equal to one in years *t-3*, *t-2* and *t-1* relative to the enactment of the parental leave law, and zero otherwise. In Models (3) and (4) we include interactions between *Post* and *Most Impacted*, an indicator that is equal to one if a firm in our treatment sample has a *Diversity index* score in the bottom 25th percent of the distribution in their country in the year prior to the enactment of the parental leave law. In Models (5)–(8), we show results for regressions using a propensity score matched (PSM) sample of firms from the control group. We use propensity scores from a probit regression using an indicator variable *Treat* that is equal to one for firms in our treatment sample of countries and zero otherwise. In Models (7) and (8), we only include *Most Impacted* firms from our treatment group. We match each treatment (*Treat* or *Most impacted*) firm with a firm from the control group using the nearest neighbor matching technique (1:1) with replacement. Appendix C has the results from the probit regressions used to obtain the propensity scores. Controls, which are not shown to conserve space include: 1) *Size*; 2) *Age*; 3) *Leverage*; 4) *Cash*; 5) *PPE-to-sales*; 6) *Foreign sales*; 7) *RD-to-sales*; 8) *Capex-to-assets*; 9) *ROA*; 10) *Closely-held*, and 11) *ADR*. *t*-Statistics, in parentheses, are based on standard errors clustered at the country level. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A – performance following the financial crisis

Dependent variable:	Tobin's *q*			
Control group:	PSM-matched sample			
	(1)	(2)	(3)	(4)
Post × *High EF index*	0.090***	0.105***	−0.183*	−0.208**
	(3.16)	(3.67)	(−1.88)	(−2.38)
Post × *High EF index* × *High Impact*			0.296***	0.338***
			(2.97)	(3.70)
Pre × *High EF index*		0.039		−0.061
		(1.31)		(−0.43)
High EF index	0.039	0.024	0.422***	0.447***
	(0.82)	(0.45)	(4.80)	(3.77)
High EF index × *High Impact*			−0.417***	−0.458***
			(−4.08)	(−3.33)
Pre × *High EF index* × *High Impact*				0.104
				(0.66)
Controls	Yes	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	9449	9449	9449	9449
Adjusted R^2	0.531	0.531	0.532	0.532

Panel B – the impact of parental leave laws

Dependent variable:	Tobin's *q*							
	Full sample		Treatment sample		PSM matched sample			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post × *Treat*	0.126**	0.137***			0.097*	0.141**		
	(2.63)	(3.87)			(1.83)	(1.97)		
Pre × *Treat*		0.023				0.080		
		(0.42)				(0.90)		
Post × *Most impacted*			0.111**	0.105*			0.358**	0.413**
			(2.21)	(1.76)			(2.42)	(2.37)
Post			−0.067**	−0.050	−0.034	−0.009	−0.347*	−0.370*
			(−2.18)	(−1.64)	(−0.62)	(−0.13)	(−1.91)	(−1.87)
Pre × *Most impacted*				−0.010				0.116
				(−0.20)				(1.08)
Pre				0.026		0.016		−0.057
				(1.29)		(0.22)		(−0.56)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21,103	21,103	3545	3545	9616	9616	1838	1838
Adjusted R^2	0.777	0.777	0.744	0.743	0.813	0.814	0.782	0.782
# countries	43	43	13	13	43	43	42	42

Table 6
Investor protection, agency costs and the impact of the *EF* culture on firm value.
Table shows results from OLS regressions of Tobin's *q*. The *EF index* is an index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET4 database: 1) employee quality; 2) health and safety; 3) Training; 4) diversity, and 5) human rights. In Panel A, we show results using three proxies for investor protection: 1) *Common law* – an indicator variable for countries with English common law origin of their commercial laws and zero otherwise; 2) *High ASDI* – an indicator variable that is equal to one for countries with above median anti-self-dealing index (Djankov et al., 2008) and zero otherwise, and 3) *High IP* - an indicator variable that is equal to one for countries with above median investor protection (La Porta et al., 2006) and zero otherwise. In Panel B we show results using proxies for firm-level governance: 1) *High Governance* – an indicator variable that is equal to one if the firm's governance score (from ASSET4 database) is in the top tercile in its country and zero otherwise; 2) *High GOV index* – an indicator variable that is equal to one if the firm's governance index (Aggarwal et al., 2009) is in the top tercile in its country and zero otherwise, and 3) *Board independence* – an indicator variable that is equal to one if the board is comprised of a majority of independent directors and zero otherwise. Finally, in Panel C, we use four measures of agency costs: 1) *High cash-to-assets* - an indicator variable that is equal to one for firms with a cash-to-assets ratio in the top tercile in its country-industry; *2*) *High dividend payout* - an indicator variable that is equal to one for firms with a dividend payout ratio in the top tercile in its country-industry. 3) *Pay-for performance* – an indicator variable for firms in which CEO pay is tied to stock performance, and 4) *Low agency-cost* – an indicator variable that is equal to one if *Agency-costs* is in the top tercile in its country-industry and zero otherwise. *Agency cost* – is the first principal component of the three agency cost proxies: cash-to-assets (multiplied by −1); *Dividend payout*, and *Pay-for-performance*. The control variables (not shown to conserve space) include: 1) *Size*; 2) *Age*; 3) *Leverage*; 4) *Cash*; 5) *PPE-to-sales*; 6) *Foreign sales*; 7) *RD-to-sales*; 8) *Capex-to-assets*; 9) *Closely-held*, and 10) *ADR*. *t*-Statistics, in parentheses, are based on standard errors clustered at the country level. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A – the impact of investor protection

Dependent variable:	Tobin's *q*		
Investor protection proxy:	*Common Law*	*High ASDI*	*High IP*
	(1)	(2)	(3)
EF index$_{t-1}$ × *Investor protection proxy*	0.0036***	0.0030**	0.0028**
	(2.88)	(2.50)	(2.18)
EF Index$_{t-1}$	0.0031***	0.0036***	0.0037***
	(2.70)	(3.01)	(2.80)
Controls	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes
Observations	21,215	21,166	20,452
Adjusted R^2	0.329	0.329	0.328
# countries	43	42	38

Panel B – the impact of firm-Level governance

Dependent variable:	Tobin's *q*		
Governance proxy:	*High Governance*	*High GOV index*	*Board independence*
	(1)	(2)	(3)
EF index$_{t-1}$ × *Governance proxy*	0.0030***	0.0058***	0.0023**
	(3.26)	(4.38)	(1.96)
Governance proxy	−0.1072**	−0.2236***	−0.1548**
	(−2.40)	(−4.32)	(−2.44)
EF index$_{t-1}$	0.0039***	0.0072***	0.0033**
	(3.88)	(2.93)	(2.42)
Controls	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes
Observations	21,215	5567	16,073
Adjusted R^2	0.329	0.356	0.313
# countries	43	23	43

Panel C – the impact of agency costs

Dependent variable:	Tobin's *q*			
Agency cost proxy:	*High Cash-to-assets*	*High dividend payout*	*Pay-for-performance*	*Low agency cost*
	(1)	(2)	(3)	
EF index$_{t-1}$ × *Agency cost proxy*	−0.0020***	0.0041***	0.0042***	0.0028**
	(−2.71)	(3.69)	(3.94)	(2.69)
Agency cost proxy	0.0476	0.0277	−0.2004***	0.0117
	(1.06)	(0.42)	(−3.80)	(0.30)
EF index$_{t-1}$	0.0057***	0.0032***	0.0038***	0.0040***
	(5.16)	(4.28)	(3.58)	(4.56)
Controls	Yes	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	21,215	21,215	21,215	21,215
Adjusted R^2	0.329	0.335	0.330	0.331
# countries	43	43	43	43

Table 7
EF culture, technical efficiency, innovation, and performance.
Table shows results from OLS and 2SLS regressions on the impact of employee-friendliness on firm technical efficiency, innovation, and performance. In Panel A we show results using two measures of technical efficiency: 1) *Sales-to-assets* and 2) *COGS-to-employees* - the natural logarithm of cost of goods sold per employee. In Models (5) and (6) we show results using the number of patents (log) as a proxy for innovation. Control variables (not shown to conserve space) include: 1) *Size*; 2) *Age*; 3) *Leverage*; 4) *Capex*; 5) *R&D*; 6) *Market-to-book*, and 7) *Volatility* – the standard deviation of weekly stock returns. In Panel B, we show results using two measures of profitability - 1) *ROA* – net income scaled by assets as of prior year-end, and 2) *ROE* - net income scaled by equity as of prior year-end. Control variables in Panel B include: 1) *Size*; 2) *Age*; 3) *Leverage*; 4) *Cash*; 5) *PPE-to-sales*; 6) *Foreign sales*; 7) *RD-to-sales*; 8) *Capex-to-assets*; 9) *Closely-held*, and 10) *ADR*. *EF index* is an index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET 4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*, and 5) *Human rights*. In Models (2), (4), and (6) of Panel A and Models (2) and (4) of Panel B we report results from 2SLS regressions in which we instrument *EF index* using two measures of country culture from Hofstede (1980): 1) *Masculinity* – masculinity versus femininity orientation, and 2) *Indulgence* – captures the extent to which a society allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. Country-year and industry-year fixed effects are included in all regressions. We use region-year and industry-year fixed effects in the first-stage regressions (not reported to conserve space) because our instrument varies by country-year. *t*-Statistics, in parentheses, are based on standard errors clustered at the country level. We report *F*-statistics and *p*-values from the first-stage regressions, and Hansen's *J*-statistic for the test of overidentifying restrictions. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A - employee-friendliness, technical efficiency and innovation

Dependent variable:	Sales-to-assets		COGS-to-employees (log)		Ln (patents)	
Estimation method:	*OLS*	*2SLS*	*OLS*	*2SLS*	*OLS*	*2SLS*
	(1)	(2)	(3)	(4)	(5)	(6)
EF index$_{t-1}$	0.503***		−0.002*		0.008***	
	(9.94)		(−1.67)		(3.43)	
EF Index IV		1.351**		−0.014**		0.021***
		(2.44)		(−2.33)		(3.23)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,330	19,963	18,308	17,990	1544	1530
Adjusted R^2	0.283	0.264	0.865	0.868	0.351	0.344
# countries	43	39	43	39	31	29
1st stage *F*-stat		31.481		22.811		11.411
1st stage *F*-statistic *p*-value		0.000		0.000		0.000
Hansen *J*-statistic		1.828		0.472		0.225
χ^2 test (*p*-value)		0.176		0.492		0.635

Panel B - impact of employee-friendliness on financial performance

Estimation method:	*OLS*	*2SLS*	*OLS*	*2SLS*
Dependent variable:	ROA	ROA	ROE	ROE
	(1)	(2)	(4)	(5)
EF index$_{t-1}$	0.025**		0.100***	
	(2.57)		(2.90)	
EF index (*IV*)		0.145***		0.338***
		(2.82)		(3.11)
Size$_{t-1}$	−0.442**	−1.169***	−0.996**	−2.435***
	(−2.36)	(−3.60)	(−2.25)	(−3.25)
Age	0.224**	0.092	0.608***	0.573*
	(2.54)	(0.77)	(2.81)	(2.01)
Leverage$_{t-1}$	−0.068***	−0.057***	0.005	0.025
	(−8.15)	(−5.26)	(0.14)	(0.86)
Cash$_{t-1}$	0.050***	0.053***	0.139***	0.153***
	(3.64)	(4.19)	(4.08)	(4.58)
PPE-to-sales$_{t-1}$	−0.000***	−0.000***	−0.000***	−0.000***
	(−3.42)	(−3.52)	(−2.97)	(−3.06)
Foreign sales-to-sales	0.009*	0.002	0.002	−0.012
	(1.74)	(0.30)	(0.15)	(−0.62)
RD-to-sales	−0.180***	−0.182***	−0.597***	−0.595***
	(−5.69)	(−5.44)	(−7.95)	(−7.16)
Capex-to-assets$_{t-1}$	0.047***	0.030	0.006	−0.036
	(2.73)	(1.62)	(0.08)	(−0.56)
Closely-held	0.002	0.016*	−0.012	0.012
	(0.25)	(1.73)	(−0.47)	(0.45)
ADR	−0.095	−0.290	−0.342	−0.835
	(−0.21)	(−0.55)	(−0.28)	(−0.68)
Country-year fixed effects	Yes	Yes	Yes	Ye
Industry-year fixed effects	Yes	Yes	Yes	Yes
Observations	20,988	20,900	20,931	20,843

(continued on next page)

Table 7 *(continued)*

Panel B - impact of employee-friendliness on financial performance				
Estimation method:	*OLS*	*2SLS*	*OLS*	*2SLS*
Dependent variable:	ROA	ROA	ROE	ROE
	(1)	(2)	(4)	(5)
Adjusted R^2	0.166	0.146	0.116	0.0985
# countries	43	41	43	41
1st stage *F*-statistic		21.548		21.675
1st stage *F*-statistic *p*-value		0.000		0.000
Hansen *J*-statistic		0.742		0.001
χ^2 *p*-value		0.389		0.973

for firm-level employee-friendliness. The coefficient on *Masculinity* is negative and significant, while *Indulgence* is positive and highly statistically significant. The first-stage *F*-statistic (*p*-value of 0.000) rejects the null hypothesis that the instruments are jointly zero. In addition, the Hansen's *J*-statistic overidentification test (χ^2) fails to reject the null hypothesis that the instruments are valid.[19] We also report *F*-statistics from the Montiel Olea and Pflueger (2013) robust weak instrument tests, which clearly reject the null hypothesis that our instruments are weak. In Model (2) we report results from the second-stage regression and confirm our prior findings. Firms with a higher *EF index* tend to have higher value, even after correcting for endogeneity using the instrumental variable approach. Using the coefficient from Model (2) in Panel C of Table 4, a one-standard deviation increase in *EF index–IV* (12.72) is associated with an 8.5% increase in Tobin's *q*.

In Models (3) and (4) of Panel C of Table 4 we show results from first- and second-stage regressions using our alternate proxy, *EF index ASSET4*. Results confirm our earlier findings and are similar in both statistical significance and economic magnitude as those using the *EF index*.

4.2.2. Change regressions

As an alternate way to address endogeneity concerns, we examine the causal effect between changes in Tobin's *q* and changes in *EF index*. To do so, we run OLS regressions using changes in Tobin's *q* (*EF index*) between *t* and *t-1* as the dependent variable and use lagged changes in *EF index* (Tobin's *q*) as the key independent variables, along with all controls used in Eq. (1) (measured as differences between *t* and *t-1*). We show results in Panel D of Table 4. We omit the control variables to conserve space. In Models (1) and (2) we use ΔTobin's $q_{t,\ t-1}$ as the dependent variable, while Models (3) and (4) use $\Delta EF\ index_{t,t-1}$. The results in Models (1) and (2) show that past changes in *EF index* are associated with future changes in Tobin's *q*. The *p*-value of the Wald tests rejects the null that lagged values of Δ*EF index* are jointly equal to zero.[20] This suggests that lagged changes in *EF index* have a causal effect on Tobin's *q*. In contrast, results in Models (3) and (4) show that lagged changes in Tobin's *q* have *no* significant impact on the Δ*EF index*. The Wald tests fail to reject the null that lagged values of ΔTobin's *q* are jointly equal to zero. Overall, the results show that while there is a causal effect of changes in employee-friendliness on Tobin's *q*, past changes in Tobin's *q* have no significant impact on *EF index*, which mitigates concerns about reverse causality.

4.3. Exogenous shocks and the employee-friendliness-firm value relation

4.3.1. Employee-friendliness and firm value following a shock to labor markets

While the results thus far corroborate our main finding that more employee-friendly firms are valued higher, in this section we use an alternate approach to assess the conditions in which an *EF* culture adds value. Specifically, we examine whether an *EF* culture matters in periods of crisis, when firms may need to demand more from their employees or be tempted to eliminate benefits provided to them. We use the financial crisis of 2008–2009 as an exogenous shock, since this event was likely unanticipated by most of the firms in our sample. In addition, the financial crisis represents a major shock to labor markets around the world. For example, the unemployment rate in Spain rose from 8.6% to 18.1% between 2007 and 2009. Other countries experienced similar shocks to unemployment.[21] The crisis also directly impacted employees. A 2012 Wharton Study from the Management group documents a decline in employee-loyalty following the crisis. The article mentions that "… some employees are clearly feeling disconnected from their work. Among the reasons cited for this: the recession, during which companies laid off huge swaths of their employees with little regard for loyalty or length of service; a whittling away of benefits, training and promotions for those who remain." The decline in employee-loyalty is likely to be less severe in firms that treat their employees better (those with a better *EF* culture). This should be reflected in improved performance for such firms during and after the crisis relative to firms that place little value on their employees.

[19] The *p*-value from Hansen's *J*-test statistic are 0.638 and 0.610 in regressions using *EF index* and *EF index ASSET4*, respectively.
[20] In Models (1) and (2) of Panel A of Table 5, the *p*-values of the Wald test are 0.027 and 0.031, respectively.
[21] We collect unemployment figures from OECD: https://data.oecd.org/unemp/unemployment-rate.htm and complement these using data from the International Labor Organization Statistics and Databases (ILOSTATS).

Table 8
Robustness tests.
Table shows results from OLS and 2SLS regressions. We use two dependent variables: Tobin's *q* or *MTB* – market-to-book value of equity. *EF index* is an index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET 4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*, and 5) *Human rights*. In Model (1), we show results for regressions excluding firms in the US. In Model (2) we run regressions excluding firm in the list of Best Companies to Work for (*BC firms*). In Models (3) and (4) we use an alternate measure of firm value, *MTB*, for the full sample and the sample excluding the US, respectively. In Models (4) and (6) we restrict the sample to firms with available data for the entire sample period and use Tobin's *q* and *MTB*, respectively. The control variables (not shown to conserve space) include: 1) *Size*; 2) *Age*; 3) *Leverage*; 4) *Cash*; 5) *PPE-to-sales*; 6) *Foreign sales*; 7) *RD-to-sales*; 8) *Capex-to-assets*; 9) *ROA*; 10) *Closely-held*, and 11) *ADR*. *t*-Statistics, in parentheses, are based on standard errors clustered at the country level. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. See Appendix A for variable definitions.

	Robustness tests					
	Excludes US	Excludes BC firms	Full sample	Excludes US	Firms with available data for all years	
Dependent variable	Tobin's *q*	Tobin's *q*	*MTB*	*MTB*	Tobin's *q*	*MTB*
	(1)	(2)	(3)	(4)	(5)	(6)
EF index$_{t-1}$	0.004***	0.004***	0.016***	0.013***	0.006***	0.018***
	(4.44)	(4.70)	(4.53)	(3.39)	(3.15)	(2.96)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,014	18,495	21,103	15,100	3927	3927
Adjusted R^2	0.439	0.316	0.205	0.217	0.405	0.240
# countries	42	43	43	42	41	41

To analyze whether an *EF* culture matters for firm value during a crisis, we first classify firms as high (low) employee-friendliness based on their value of *EF index* as of 2006.[22] Firms with values of *EF index* as of 2006 in the top third of the distribution in their country are classified as *High EF index*. Using this indicator variable, we employ a DiD methodology using a propensity score - (PSM) matched control group of firms with low values of the *EF index* as of 2006. To identify the control group, we first run a probit model to calculate propensity scores using the indicator variable *High EF index* and the full sample of firms with available data as of the end of 2006. We use the full set of firm-level control variables in our regressions and include country and industry fixed effects in our estimation. We then match each treated firm (*High EF index* = 1) to a control firm using the nearest neighborhood method with replacement.[23] To examine whether the post-financial crisis performance differs between firms with high and low ex-ante employee-friendliness, we run several specifications of the following regression:

$$q_{it} = \alpha + \beta_1 High\ EF + \beta_2 High\ EF \times Post + \beta_3 Post + \sum \beta_m Controls + \sum \beta_n FE + \varepsilon_{it} \quad (2)$$

where *High EF* is an indicator variable for out treated firms – those with values of our employee-friendliness proxies as of year-end 2006 in the top 30% of the distribution; *Post* is an indicator variable that equals one for years after 2008 and zero otherwise. All of the other control variables are the same ones used and discussed previously. The results from the estimation of Eq. (2) are shown in Panel A of Table 5.

The key assumption in our identification strategy is that *High EF index* firms and *Low EF index* firms follow similar trends prior to the crisis. To test this parallel trends assumption underlying the DiD design, in Model (2) we include interactions between the *High EF index* variable and an indicator variable, *Pre*, which is equal to one for the two years leading up to the crisis (2005 and 2006) and zero otherwise. The results show an insignificant coefficient on the interaction term (*Pre* × *High EF index*), which suggests that *High* and *Low EF index* firms followed similar trends prior to the crisis. Importantly, the results in Models (1) and (2) show a positive and significant coefficient on the interaction term (*Post* × *High EF index*), indicating that on average firms with higher ex-ante *EF index* have higher Tobin's *q* in the post-crisis years. The results in Model (1) in Panel A of Table 5 show that relative to their matched firms *High EF index* firms have Tobin's *q* that are on average 5.3% higher in the post-crisis period.[24]

We use the financial crisis as an exogenous shock to the labor market and the results show that firms with a more *EF* culture seem to fare better around this shock. However, the effects of the crisis on the labor market (i.e. the magnitude of the shock) differ widely across countries.[25] Next, we incorporate the magnitude of the shock into our analysis. Specifically, we run regressions

[22] We rank firms based on their pre-crisis employee-friendly culture values as of 2006. Although the height of the crisis happened in 2008, many firms were affected (and possibly made changes) in the latter part of 2007. As such, using values of culture as of the end of 2007 may pick up adjustments made by firms due to the deteriorating economic conditions.

[23] In our internet appendix, we show results from the probit regressions, along with various tests to assess the quality of our PSM matching procedure. The results show that after matching the normalized differences (Δx) for all control variables between treatment and control firms are all well within the recommended 0.25 threshold (Imbens and Wooldridge (2009)); the highest value for Δx is for age (0.10).

[24] The coefficient on the interaction term *Post* x *High EF index* in Model (1) is 0.090. The mean Tobin's *q* for firms in the sample is 1.71. Thus, in the post-crisis period, *High EF index* firms have Tobin's *q* that is 0.053 (0.090/1.71) higher.

[25] For example, the unemployment rate more than doubled between 2007 and 2009 in the US, while in Germany, it went down slightly from 8.6% to 7.7%.

using an expanded version of Eq. (2) that includes interactions with an indicator variable, *High Impact*, that is equal to one for countries with an above-median change in the unemployment rate between 2007 and 2009, and zero otherwise. Our variable of interest is the coefficient on the triple interaction term, *Post* × *High EF index* × *High Impact*. We expect this coefficient to be positive and significant if, as expected, an *EF* culture is more valuable in periods of large shocks to the labor markets. The results shown in Models (3) and (4) of Panel A of Table 5 confirm that more employee-friendly firms tend to outperform other firms during periods of crisis when the labor markets were impacted more than the median. The results are both economically and statistically significant. Relative to matching firms, *High EF index* firms in *High Impact* countries have a Tobin's *q* that is on average 17.3% higher in the post-crisis period.[26] The magnitude and statistical significance of the impact are significantly larger than those found in Model (1) in which we did not account for differences in the magnitude of the impact of the crisis on the labor market.

The results in this section suggest that firms with a more *EF* culture perform better during periods of crisis. In such periods, treating employees well appears to be beneficial. These results add further support to our main findings and suggest that having an *EF* culture is value enhancing, especially in periods of crisis when firms may need to demand more from their employees, ceteris paribus.

4.3.2. EF culture and firm value around parental leave laws

As a final way to assess whether employee-friendliness impacts firm value, we exploit the staggered implementation of parental leave laws during our sample period across several European countries. Specifically, we examine the implementation of the Parental Leave Directive 2010/18 across Europe. The staggered implementation of the directive allows us to better assess the causal effects of a regulation that aims to improve employee treatment by improving the quality of parental leave policies.[27]

Using the enactment of these laws, we employ a DiD design. An advantage of this approach is that countries enacted parental leave regulations at different points in time, which helps with our identification strategy.[28] This approach implicitly takes as the benchmark group all firms from countries that did not enact such regulations as of a particular time (Bertrand and Mullainathan, 1999, 2003). Specifically, we estimate various specifications of the following regressions:

$$q_{it} = \alpha + \beta_1 Treat + \beta_2 Treat \times Post + \beta_3 Post + \sum \beta_m Controls + \gamma_i + \vartheta_t + \varepsilon_{it} \quad (3)$$

Treat is an indicator variable that is equal to one for firms in countries that implemented the Parental Leave Directive and zero otherwise. *Post* is an indicator that is equal to one starting the year after the enactment of the Parental Leave Directive in the country and zero otherwise.[29]

We use the same set of controls employed and discussed preciously. γ_i and φ_t refer to firm and year fixed effects. We use firm and year fixed effects to identify the within firm and within year change in valuation between treatment and control firms after the enactment of the parental leave laws. To address the parallel trend assumption underlying our DiD design, we include a variable, *Pre* that is equal to one in the two years leading up to the enactment of the law and zero otherwise, as well as its interaction with *Treat*. If the parallel trend assumption holds, the interaction term (*Pre* × *Treat*) should be insignificant, which would indicate that in the absence of treatment, the treatment and control firms follow similar trends.

We show results in Panel B of Table 5. In Models (1) and (2) we assess the average effect of the enactment of parental leave laws. We include all control variables used and discussed previously, but do not report them to conserve space. The results suggest that firm value increases following the enactment of parental leave laws. The results show that Tobin's *q* on average increases by 7% following the enactment of the parental leave laws for firms in our treatment group of countries.[30] In Model (2), we include the *Pre* indicator, and observe that the interaction term (*Pre* × *Treat*) is insignificant, but our variable of interest, the coefficient of the interaction term, *Post* × *Treat* remains positive and statistically significant.

The average effects of the enactment of parental leave laws on firm value may be driven by simultaneous regulations and other confounding events in these countries. To more directly examine the effect of parental leave laws, we next examine changes in Tobin's *q* for firms that are most likely to be impacted by the enactment of parental leave laws. Firms with generous parental leave policies are unlikely to be affected by the enactment of the Parental Leave Directive. However, those firms with stingy parental leave policies may need to change their policies to comply with the reforms. Since the quality of parental leave is a subcomponent of *Diversity*, we expect that firms with low scores on *Diversity* prior to the reforms are most likely to be impacted by the enactment of the directive.

To perform this test, we estimate Eq. (3) using our treatment sample of firms and include an interaction between *Post* and *Most Impacted*, which is an indicator that is equal to one for firms with a *Diversity* index in the bottom quartile in their county

[26] The coefficient on the interaction term *Post* x *High EF index* x *High Impact* in Model (3) is 0.296. The mean Tobin's *q* for firms in the sample is 1.71. Thus, in the post-crisis period, *High EF index* firms in *High Impact* countries have Tobin's *q* that are 17.3% (0.296/1.71) higher.

[27] Among others, the directive extended the minimum period that parents can take parental leave from three to four months "The Parental Leave Directive further provides protection from discrimination for workers on the grounds of applying for or taking of parental leave and stipulates that, at the end of the leave, workers have the right to return to the same job or, if that is not possible, to an equivalent or similar job consistent with their employment contract or employment relationship" (Palma Ramalho et al. (2015)). Palma Ramalho et al. (2015) provide details on the implementation of Parental Directive 2010/18 across 33 European countries.

[28] We have 13 countries that implemented the Parental Leave Directive during our sample period: Belgium (2012), Denmark (2013), Finland (2011), France (2012), Germany* (2007), Greece (2012), Ireland (2013), Italy (2013), Luxembourg (2013), Netherlands (2011), Norway (2011), Poland (2013), and United Kingdom (2013). *Germany passed the Federal Law on Parental Allowance and Parental Leave in 2007. The enactment of such law made Germany compliant with the Parental Leave Directive 2010/18. We thus include Germany in our sample of treated countries adopting Parental Law. Excluding Germany from our treatment group does not affect our results.

[29] For countries in the control group we set *Post* equal to zero. In robustness tests, we set *Post* equal to one for years after 2011 for countries in the control group. Results (untabulated) are similar when using this alternate approach.

[30] The coefficient on *Post* x *Treat* in Model (1) of Panel B of Table 5 is 0.126. This represents an increase of 7.0% (0.126/1.80) in Tobin's *q*.

as of year *t-1* relative to the enactment of the parental leave law and zero otherwise. Our sample size is greatly reduced because of the need to have data as of the year before the enactment of the parental leave law. We report results in Models (3) and (4) of Panel B of Table 5. The results show a positive and significant coefficient on the interaction term *Post* × *Most impacted*. The results show that the changes in firm value after the enactment of the parental leave laws are higher for firms that are most impacted.

In Models (5) through (8) of Panel B of Table 5 we replicate our results from Models (1)–(4) using a PSM-matched sample, to better control for differences between firms in our treatment group and those in our control group. To identify the control group, we use a PSM matching approach. We first run a probit model to calculate propensity scores using an indicator variable, *Treat*, which is equal to one for firms from the 13 European countries that adopted parental leave laws during our sample period, as our dependent variable. We show the full set of results from these probit regressions in Appendix C. Using the propensity scores, we match each treatment firm with a firm from the control group of countries using the nearest neighborhood method (we employ a 1:1 matching with replacement).

To assess the quality of our matching approach, we run several tests. First, we rerun the above probit regression using the matched sample. Model (2) of Appendix C shows these results. The results show that after matching, none of the independent variables are statistically significant. In addition, the Pseudo R^2 drops from 0.25 in Model (1) to 0.14 in the post-match sample (Model 2). To more directly assess the quality of our matching, in Panel B of Appendix C we compare the values of control variables between our treatment firms and the control firms pre- and post-match. Following Imbens and Wooldridge, 2009 and Focke et al. (2017), we compare firms based on normalized differences (Δx).[31] As Imbens and Wooldridge (2009) argue, using normalized differences addresses problems associated with *t*-statistics when there are large differences in the means of two distributions. The results for the full sample in Panel B of Appendix C show that firms in our treatment sample of European countries tend to have a larger proportion of foreign sales and are more likely to be cross-listed. For the matched sample, the normalized differences (Δx) are all within the recommended 0.25 threshold (Imbens and Wooldridge (2009)). Overall, our tests suggest that the PSM matching procedure yields a comparable set of treatment and control firms.

We show results from the estimation of Eq. (3) using the PSM-matched sample in Models (5)–(8) of Panel B of Table 5. In Models (5) and (6) we use the full sample of treatment firms and their respective matches. In Models (7) and (8), we obtain matches only for firms that are most likely to be impacted by the enactment of the parental leave law (*Most Impacted*).[32] Our results show that after the enactment of parental leave laws in their country, firms experience an increase in value relative to their PSM-matched firms. Taking the coefficient in Model (6) as an example, following the enactment of parental leave laws, firms in our treatment sample have Tobin's *q* that is 7.8% higher than that of their PSM-matched control firms.[33] For *Most impacted* firms the magnitude of the impact is significantly larger. From Model (8), following the enactment of parental leave laws, *Most impacted* firms have Tobin's *q* that is 22% higher than that of their PSM-matched firms.[34]

Overall, the results in this section suggest that employee treatment is value enhancing. Reforms aimed to improve employee treatment through enhancing parental leave policies are associated with subsequent increases in valuation, especially for firms that are most likely to be affected by the reform.

4.4. Employee-friendly policies and agency costs

Our results thus far show that an *EF* culture is value enhancing, which supports the good governance view. This raises the question as to why not all firms adopt such an *EF* culture (or if they do, why it may not be value enhancing). In this section, we test Hypotheses 2a and 2b and examine how agency costs that lead to misalignment between manager and shareholder incentives affect the relation between an *EF* culture and firm value. The governance view argues that the creation of an *EF* culture will be value enhancing if the policies are set in a way that maximizes shareholder value by encouraging employees to work harder and to become more productive. Per Hypotheses 2a and 2b, we expect that the value implications of an *EF* culture will be stronger in firms with fewer agency costs, in which managers' incentives are better aligned with those of shareholders. We first examine the impact of country-level institutions in curtailing agency problems (Hypothesis 2a) and then focus on agency problems within firms (Hypothesis 2b).

4.4.1. Impact of country-level investor protection

Country level investor protection can serve as a mechanism to reduce agency problems by mitigating the ability of managers to engage in value-destroying activities to pursue private benefits. One way in which country-level institutions act as a deterrent to the extraction of private benefits is through the provision of legal rights to minority shareholders (La Porta et al., 1997). Per Hypothesis 2a, we expect that the value implication of an *EF* culture should be stronger for firms in countries with better legal protection. In creating an *EF* culture, managers are more likely to pursue shareholder interests in countries with better legal protection. To examine this hypothesis, we use three proxies of investor protection commonly used in the literature. Specifically, we use: 1) *Common law* – an indicator that is equal to one for countries with a common law origin of their commercial laws (La Porta et al., 1998); 2) *ASDI* – the anti-self-dealing index from Djankov et al. (2008), and 3) *IP* – a broad index of investor protection from La Porta et al. (2006). Using the latter two measures, we create indicator variables (*High ASDI*, *High IP*) that are equal to

[31] $\Delta x = \bar{x}_T - \bar{x}_c / \sqrt{{s_T}^2 + {s_c}^2}$; where $\bar{x}_T$ ($\bar{x}_c$) is the sample mean of the covariates for treatment (control) firms, and ${s_T}^2$ (${s_c}^2$) is the estimate of the variance.

[32] We match each *Most impacted* firm with a firm from the control group of countries. To find matches, we use propensity scores from probit regressions, as before, using *Most impacted* indicator as the dependent variable. We report results from these regressions pre- and post-match in Models (3) and (4) of Appendix C.

[33] From Model (6) in Panel B of Table 5, the coefficient on the interaction term *Post* × *Treat* is 0.141, which is 7.8% of the mean Tobin's *q* for this subsample (1.81).

[34] From Model (8) in Panel B of Table 5, the coefficient on the interaction term *Post* × *Most impacted* is 0.413, which is 21.97% (0.413/1.88) of the mean Tobin's *q* (1.88) for this subsample.

one for countries with above-median values and zero otherwise. We formally test Hypothesis 2a by estimating Eq. (1) using interactions between *EF index* and our investor protection proxies.

We show results from the above estimations of Eq. (1) in Panel A of Table 6. Consistent with Hypothesis 2a, the results show that the impact of an *EF* culture on firm value is significantly larger for firms in countries with better investor protection. Taking the coefficients in Model (1), a one-standard deviation increase in *EF index* is associated with a 3.7% (7.9%) increase in Tobin's *q* relative to its mean for firms in civil (common) law countries.[35] The impact is more than twice as large for firms in common law countries. We observe a similar result using our alternate proxies of investor protection.

4.4.2. Impact of firm-level governance and agency costs

Governance mechanisms (e.g. monitoring by independent boards) help to align managerial and shareholder incentives. Per Hypothesis 2b, we expect managers in firms with better governance to more likely follow value-maximizing objectives when making decisions, including the creation of an *EF* culture. Thus, the impact of an *EF* culture on firm value should be stronger in firms with better governance. We test Hypothesis 2b using three governance proxies: 1) *High Governance* – an indicator variable that is equal to one for firms with a governance index (the governance score from ASSET4) that is in the top tercile of the distribution in their country and zero otherwise; 2) *High GOV index* – an indicator variable that is equal to one for firms with *GOV index* (from Aggarwal et al., 2009)[36] in the top tercile of the distribution in their country and zero otherwise, and 3) *Board independence* – an indicator variable that is set to one for firms with boards comprised of a majority of independent directors. We show results from these regressions in Panel B of Table 6.

Consistent with the Hypothesis 2b, the results in Panel B of Table 6 show that firms with better governance benefit more from an *EF* culture. From Model (1), a one-standard deviation increase in *EF index* is associated with a 4.5% (8.1%) increase in Tobin's *q* for firms with governance scores in the bottom two (top) terciles of the distribution in their country. We observe similar results using the alternate proxies for governance in Models (2) and (3). Overall, our results in this section add further support to the good governance view.

Because managers can use employee treatment (or pay) for ulterior motives (Cronqvist et al., 2009; Landier et al., 2009), adopting an *EF* culture may not add value (or be value destroying) in firms with more agency problems. Per Hypothesis 2b, we expect that the value implications of an *EF* culture will be more pronounced in firms with fewer agency costs, in which managers' incentives are better aligned with those of shareholders. As an alternate test of Hypothesis 2b, we use various proxies for agency costs. First, we use two proxies based on agency costs due to the free cash flow problem (Jensen and Meckling, 1976; Morck and Yeung, 2005). Specifically, we use *Cash-to-assets* and *Dividend payout ratio*. Agency problems are exacerbated when firms have excess free cash flows and managers could easily use abundant cash for detrimental reasons, so agency problems should increase with higher cash-to-assets ratios. In contrast, paying out more dividends could act as a disciplining mechanism for managers, mitigating managers' ability to divert funds for ulterior motives. Agency costs should be lower for firms with higher dividend payout ratios. As a measure of how well managers' incentives are aligned with shareholders, we use a measure of the extent to which CEO compensation is tied to shareholder return. Specifically, we use *Pay-for performance* – an indicator variable for firms in which CEO pay is tied to total shareholder return from ASSET4. Agency costs should be lower for firms that tie CEO pay to firm performance. Finally, as an all-encompassing measure of agency costs, we use *Agency-costs*, which is the first principal component of the three agency cost proxies: *Cash-to-assets* (multiplied by −1): *dividend payout*, and *pay-for-performance*. We construct *Agency-costs* to be decreasing in agency costs. Using each continuous measure, we create indicator variables (*High cash-to-assets*, *High dividend payout*, and *Low Agency Costs*) that are equal to one for firms with values in the top tercile of the distribution in their country-industry.[37]

We show results from the estimation of Eq. (1) using interactions with the above proxies for agency costs in Panel C of Table 6.[38] Our variable of interest is the coefficient on the interaction term (*High EF index* × *Agency cost proxy*). Consistent with Hypothesis 2b, the results show that the impact of an *EF* culture on firm value is larger for firms with fewer agency problems: those with lower cash-to-assets, higher dividend payout ratios, and those in which managerial incentives are better aligned through their compensation scheme. In addition, the interaction with the broad agency cost proxy (*Low Agency cost*) yields similar results. From Model (2) of Panel C of Table 6, a one-standard deviation increase in *EF index* is associated with a 3.8% increase in Tobin's *q* for firms with lower dividend payout ratios (bottom two terciles). In contrast, a one-standard-deviation increase in *EF index* is associated with an 8.6% increase in Tobin's *q* for *High dividend payout* firms.[39] Results are of similar magnitude when we use the alternate proxies for agency costs in Models (1), (3) and (4).

Overall, the results suggest that the value of an *EF* culture is larger for firms in which managerial and shareholder incentives are more aligned. In untabulated results, we also document that firms with lower agency costs tend to have more *EF* policies. The latter findings are in line with the findings in Ferrell et al. (2016) with respect to overall CSR policies. Taken together, our results suggest that agency costs play an important role in the value implications of an *EF* culture, which may explain why some firms do not invest as much in *EF* policies, or when they do why it is not always value enhancing.

[35] The coefficient on *EF index* in Model (1) of Panel A of Table 6 is 0.0031. A one-standard deviation increase in *EF index* (21.17) is associated with a 0.066 increase in Tobin's *q*, or 3.7% of its mean (1.8). Similarly, a one-standard deviation increase in *EF index* is associated with a 0.142 ([0.0031 + 0.0036] × 21.17) increase in Tobin's *q*, or 7.9% increase relative to its mean.

[36] *GOV index* is the governance index from Aggarwal et al., 2009. The index is only available for a subset of 23 developed countries in our sample. We thus use this proxy primarily to validate our results using the governance index from ASSET4.

[37] We use the Fama French 17 industry classification to maximize the number of firms in each country-industry-year.

[38] We do not report the coefficients on the control variables to conserve space.

[39] Based on the coefficient on *EF index* (0.0032) in Model (2) of Panel C of Table 6, a one-standard deviation increase in *EF index* (21.17) is associated with a 0.068 increase in Tobin's *q*, which represents a 3.8% increase (0.068/1.8) for firms with lower dividend payout ratios. For *High dividend payout* firms, the impact is larger ([0.0032 + 0.0041] * 21.17) / 1.8, or 8.6%.

4.5. Employee-friendly culture, technical efficiency, and innovation

In this section we investigate the channels through which an *EF* culture may impact firm value. The reciprocity and good governance views suggest that better employee treatment should encourage workers to be more productive, which may help explain the observed improvements in firm value. If this mechanism exists, we should observe that more employee-friendly firms have workers that are more productive. Firms with more motivated and driven employees should be able to maximize their earnings potential and improve technical efficiency by making better products, delivering better services, and potentially lowering costs. This should ultimately impact firm performance and firm value. To explore this hypothesis, we use two measures of technical efficiency from previous literature (see e.g. Loderer et al., 2014): 1) *Sales-to-assets* and 2) *COGS-to-employees* (log) – cost of goods sold per employee. We also examine the impact on a proxy for innovation, the number of patents.[40]

Per our hypothesis, we expect firms with a more *EF* culture to have higher asset turnover (higher *Sales-to-assets*), lower costs (lower *COGS-to-employees*), and more innovation. We report results from these regressions in Panel A of Table 7. To address endogeneity concerns, we also present results from 2SLS regressions in which we instrument *EF index* using our two instruments based on country culture: *Masculinity* and *Indulgence*. In all of the regressions we control for various factors that have been shown to affect technical efficiency and innovation including: firm age, size, capital expenditures, leverage, R&D expenses-to-sales, market-to-book ratio, volatility, and profitability (*ROA*). All control variables are lagged one year.

In Models (1), (3), and (5) of Panel A of Table 7 we report results from OLS regressions. In Models (2), (4), and (6), we report results from our 2SLS regressions. We find results consistent with the reciprocity view. Firms with higher *EF index* are associated with improved technical efficiency and innovation. Taking the coefficients in Model (1), a one-standard-deviation increase in *EF index* is associated with a 10.54 (20.95×0.503) increase in *Sales-to-assets*, which represents an 11.4% increase relative to its mean (92.1). We find similar results, albeit of smaller magnitude when using costs of goods sold per employee and patents. Results continue to hold when we instrument our *EF index*.

Overall, the results in this section are consistent with our hypothesis that firms with more *EF* culture encourage employees to work harder (and thus be more innovative) and this increased effort appears to improve efficiency and ultimately firm value.

4.6. Employee-friendliness and firm performance

We next examine the impact of employee-friendliness on firm performance. Specifically, we explore whether a more *EF* culture is associated with higher profitability. Better employee treatment should encourage workers to be more productive, which could translate into higher profitability. To examine this hypothesis, we run regressions similar to Eq. (1) using two proxies for profitability: 1) *ROA* - net income divided by lagged assets, and 2) *ROE* - net income divided by lagged book value of equity.

The results from regressions of firm profitability on *EF* culture are shown in Panel B of Table 7. In line with our hypothesis, the results in Panel B of Table 7 show a positive and significant coefficient on the *EF index*. Firms with more *EF* culture have higher *ROA* and *ROE*. The results are economically significant. As an example, the coefficient on *EF index* in Model (1) indicates that a one-standard-deviation increase in *EF index* is associated with an 8.0% increase in *ROA*.[41] The results are similar when we use *ROE* as our measure of profitability. In Models (2) and (4) we show results from 2SLS regressions in which we instrument *EF index* with our two instruments identified earlier, 1) *Masculinity*, and 2) *Indulgence*. Our results are similar using this approach. In results available in our internet appendix, we examine the impact of individual components of *EF index*, and find that higher values of *EQ index*, *TD index*, and *HR index* are associated with higher *ROA* and *ROE*. The impact of the individual indices are of similar magnitude as those of the *EF index*.

5. Additional robustness tests

In Table 8 we present alternative specifications from our main valuation regression results found in Panel A of Table 4. Specifically, in Model (1) we report results from regressions in which we exclude US firms from the sample, as they account for roughly 24% of the sample. The results here are very similar in significance and magnitude as those in Table 4, Panel A. To examine whether our results are driven by firms that are included in the list of "Best Companies to Work for" (BC firms) used in prior studies, in Model (2) we run regressions excluding BC firms. The results continue to hold when excluding BC firms. Further, as an additional robustness test we calculate value using market-to-book value of equity instead of Tobin's *q*. We report results using market-to-book for the full sample, as well as excluding US firms in Models (3) and (4), respectively. We find similar results to those reported earlier. Finally, to examine whether our results are affected by the changing composition of our sample of firms, since ASSET4 database's coverage improves throughout our sample period, in Models (5) and (6) of Table 8 we show results in which we restrict the sample to firms with available data for the full sample period using Tobin's *q* and market-to-book, respectively.[42] The results using this subsample of firms corroborate our main findings.

In addition, in our internet appendix, we replicate results in Panel A using 2SLS regressions in which we instrument *EF index* with our instruments *Masculinity* and *Indulgence*. All results continue to show positive and significant coefficients on our *EF index IV*. The

[40] Unfortunately, data availability for patents is limited to a small subsample of firms (1544 firm-year observations). This limits the generalizability of our results. Our findings, however, are consistent with existing evidence in US studies that document a positive impact of employee treatment on innovation (e.g. Chen et al., 2016).

[41] The coefficient on *EF index* in Model (1) of Panel B of Table 7 is 0.025. Thus, a one-standard deviation increase in *EF index* (20.9) is associated with a 0.523 increase in *ROA*. From Table 2, the average *ROA* is 6.52%. Thus, the 0.523 increase corresponds to an (0.523/6.52) 8.0% increase.

[42] This also avoids any survivorship bias that may exist in our earlier regression results.

one exception is Model (5); in this model, we limit our sample to firms with available data for the full sample period, the coefficient on *EF index IV* is positive, but not statistically significant (*t*-statistic of 1.39).

6. Conclusion

Anecdotal observation suggests that some firms are starting to offer more perks to employees in an attempt to create a more employee-friendly culture. We examine whether such behavior is in line with shareholder value maximization and explore the conditions in which creating a more *EF* culture is value enhancing for shareholders. Overall, we show that firms with a more *EF* culture (e.g. firms that provide more benefits and training, and equal opportunities for advancement) have higher valuations and perform better. Specifically, we find that firms with higher *EF index* (our proxy for firm-level culture) have higher value (Tobin's *q*). In line with the good governance view, the impact of *EF* culture on firm value is stronger for firms in countries with better investor protection and for firms with better governance and lower agency costs. These results suggest that creating an *EF* culture is value enhancing when managers make choices (including the creation of an *EF* culture) that are in line with shareholders' interests.

Our results suggest that an *EF* culture adds value via enhanced employee motivation, which encourages employees to become more efficient. Quasi-natural experiments suggest that the effect of *EF* culture on firm value is causal. Specifically, we find that firms with a more *EF* culture perform better during the global financial crisis. In addition, we show that the enactment of parental leave laws across Europe that aim to enhance parental leave policies (and thus improve employee treatment) increase firm value, especially for firms that are most affected by such laws (i.e. firms most likely to make changes to improve parental leave policies). Finally, we document that an *EF* culture adds value through improved efficiency (i.e. higher sales-to-assets; lower costs) and higher profitability (*ROA*, *ROE*).

Appendix A. Variable definitions

Variable name	Description
ADR	Indicator that equals one if the firm is cross-listed on a U.S. stock exchange and zero otherwise.
Age	Log of firm age. Firm age is the number of years since the firm was incorporated. When the date of incorporation is unavailable, firm age is calculated as the number of years since the firm first appeared on the DataStream and WorldScope databases.
Agency cost	The first principal component of cash-to-assets (multiplied by −1), dividend payout, and the pay-for-performance indicator.
Board independence	An indicator variable that is equal to one if the firm's board of directors is comprised of a majority of independent directors. Data obtained from ASSET4 database.
Capex-to-assets	Capital expenses scaled by the lagged book value of assets.
Cash	Cash divided by total assets.
Closely-held	Percentage of closely held shares.
COGS-to-employees	Cost of goods sold divided by the total number of employees (log).
Common Law	An indicator variable that is equal to one for countries with an English common law origin of their commercial laws and zero otherwise (see e.g. La Porta et al., 1998).
EF index	An index ranging from 0 to 100 based on the proportion of 32 attributes of employee-friendliness adopted by a firm. The 32 attributes cover the following areas from the social score components from ASSET 4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*, and 5) *Human rights*.
EF index – ASSET4	The average of the five social component scores from the ASSET4 database: 1) *Employment quality*; 2) *Diversity*; 3) *Training*; 4) *Health and safety*, and 5) *Human rights*. Each component receives a percentage score by ASSET 4 based on several factors.
Foreign sales	Two-year average of the ratio of foreign sales to sales.
GDP Growth	Annual growth in real gross domestic product (GDP).
High ASDI	An indicator variable that is equal to one if the anti-self-dealing index (ASDI) from Djankov et al. (2008) is above the cross-country median and zero otherwise.
High Governance	Indicator variable that is equal to one if the firm's governance score (score on the governance pillar from ASSET4 database) is above the median in its country, and zero otherwise.
High GOV index	Indicator variable that is equal to one if the firm's governance index from Aggarwal et al. (2009) is above the median in its country, and zero otherwise.
High IP	Indicator variable that is equal to one if the index of investor protection (principal component of disclosure requirements, liability standards, and anti-director rights) from La Porta et al. (2006) is above the cross-country median, and zero otherwise.
Indulgence	Hofstede's (1980) measure of culture. Indulgence stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun.
Leverage	Total debt divided by book value of assets.
Ln Patents	The log of one plus the number of patents.
Log GDP per capita	Annual log of real gross domestic product per capita (constant U.S. dollars).
Masculinity	Hofstede's measure of culture. The Masculinity side of this dimension represents a preference in society for achievement, heroism, assertiveness, and material rewards for success. Society at large is more competitive. Its opposite, Femininity, stands for a preference for cooperation, modesty, caring for the weak and quality of life.
Most impacted	An indicator variable that is equal to one for firms with a *Diversity* index in the bottom quartile of the distribution in their country as of the year prior to the enactment of the Parental Leave Directive 2010/18 in the country and zero otherwise.
Pay-for-performance	Indicator variable that is equal to one for firms in which CEO pay is tied to stock performance, and zero otherwise.

(continued)

Variable name	Description
PPE-to-sales	Property, plant, and equipment, scaled by sales.
RD-to-sales	The two-year average research and development (R&D) expenses divided by sales.
ROA	Net income divided by lagged book value of assets.
ROE	Net income divided by lagged book value of equity.
Sales-to-assets	Sales divided by book value of assets as of the beginning of the year.
Size	Log of total assets (US$ 000s).
Tobin's *q*	Total assets less book value of equity plus market value of equity divided by book value of total assets.
Treat	An indicator variable that is equal to one for firms in European countries that implemented the Parental Leave Directive 2010/18 during our sample period and zero otherwise.

Appendix B. Employee-friendly (*EF*) index components

The 32 attributes correspond to five categories of social performance: *Employment quality*; *Diversity*; *Training*; *Health and safety*, and *Human rights*. The attributes are based on a subset of questions used by ASSET to rate each of these components. A firm is assigned a value of one for positive responses, or if its value is above (below) the industry median. We create an index for each of the five categories with a maximum value of 100% based on the fraction of all nonmissing attributes that a firm satisfies. An aggregate index is computed in a similar fashion (as the proportion of all nonmissing attributes that a firm satisfies). We report the percentage of firms that meet each of the attributes (% meeting). To do so, we first compute the percentage of firms that meet each attribute each year and report the time-series average.

		% meeting criteria
Employment quality:		
1	Company monitors or measures its performance on employment quality.	8.21%
2	Percentage of employee turnover below industry median.	41.35%
3	Strikes that led to lost working days below industry median.	97.21%
4	Average salaries and benefits above industry median.	48.54%
5	Company won an award or any prize related to general employment quality “Best Company to Work For”	10.78%
6	CEO salary-to-average wage below industry median.	47.83%
7	Number of lay-offs divided by the total number of employees below industry median.	0.08%
	DIVERSITY:	
8	Company has a diversity and equal opportunity policy.	73.59%
9	Company has a work-life balance policy.	30.17%
10	Company has the appropriate communication tools (whistle blower, ombudsman, suggestion box, hotline, newsletter, website, etc.) to improve diversity and opportunity.	38.68%
11	Company sets targets or objectives to be achieved on diversity and equal opportunity.	25.79%
12	Company sets targets or objectives to be achieved on employees' work-life balance.	13.89%
13	Percentage of women employees above industry median.	46.03%
14	Percentage of women managers above industry median.	44.05%
15	Percentage of elderly employees above industry median.	31.75%
Training:		
16	Company has a policy to support the skills training of its employees.	61.63%
17	Company has a policy to support the career development of its employees.	57.02%
18	Company monitors its own training and development programs.	14.06%
19	Average hours of training per year per employee above industry median.	41.86%
20	Company provides training in environmental, social or governance factors to its suppliers.	7.80%
21	Training costs per employee above industry median.	41.14%
Health and safety:		
22	Company has an employee health & safety team.	33.19%
23	Company has the appropriate internal communication tools (whistle blower, suggestion box, hotline, newsletter, website, etc.) to improve employee health & safety.	41.21%
24	Company sets targets or objectives to be achieved on employee health & safety.	55.42%
25	Total number of injuries and fatalities per 1 million h worked is below industry median.	43.71%
26	Number of injuries and fatalities reported by employees and contractors while working for the company is below industry median.	42.48%
Human rights:		
27	Company has a policy to ensure the freedom of association of its employees.	22.11%
28	Company has a policy to avoid child labor.	30.92%
29	Company has a policy to avoid forced labor.	28.43%
30	Company has a human rights policy that is applied to its supply chain.	26.28%
31	Company has a general, all-purpose policy regarding human rights.	33.13%
32	Company monitors human rights in its or its suppliers' facilities.	11.87%

Appendix C. Details of propensity-score-matching (PSM) procedure

The propensity-score-matching approach involves pairing treatment and control firms (Dehejia and Wahba, 2002). The dependent variable, Treat is an indicator variable that is equal to one for firms in EU countries that enact parental leave laws implementing EU Parental Leave Directive 2010/18 during our sample period and zero otherwise. The treatment countries include Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, and the United Kingdom. We first estimate a probit regression to model the probability of being a firm in our treatment sample. Next, we estimate the propensity score for each firm using the predicted probabilities from the probit model. We then match each treatment firm to a control firm from a control country using the nearest neighbor matching technique (with replacement). Panel A reports the estimation results of the probit model. In Model (1) we show results from the probit model used to generate the propensity scores. In Model (2), we run the probit model using only the matched sample to determine whether there are significant differences between matched and control firms. In Models (3) and (4), we run the pre (post) match probit regressions restricting the treatment group of firms to those that are deemed Most Impacted by the parental leave law. Specifically, *Most Impacted* is an indicator that is equal to one for firms in our treatment sample with a *Diversity* index in the bottom quartile of the distribution in their country in the year prior to the enactment of the parental leave law. Panel B show descriptive statistics of the firm-level variables for our group of treatment firms and the control firms for the full sample. We report the mean values for each matching characteristic pre- and post-match, along with the normalized difference (ΔX) to evaluate the quality of the matching, following Imbens and Wooldridge (2009). *Z*-statistics, in parentheses, are based on standard errors clustered at the country level. *, **, and *** indicate significance at the 0.10, 0.05, and 0.01 two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A – probit regressions

Dependent variable:	*Treat*		*Most Impacted*	
	Pre-match	Post-match	Pre-match	Post-match
	(1)	(2)	(3)	(4)
$Size_{t-1}$	−0.045	−0.006	−0.012**	−0.031
	(−1.49)	(−0.12)	(−2.39)	(−0.56)
Age	0.001	0.026	−0.003	−0.013
	(0.04)	(0.52)	(−0.53)	(−0.21)
$Leverage_{t-1}$	0.001**	−0.001	0.000	−0.001
	(2.11)	(−0.74)	(1.53)	(−0.51)
$Cash_{t-1}$	−0.003	−0.001	−0.001	0.003
	(−1.52)	(−0.33)	(−1.63)	(0.57)
$PPE\text{-}to\text{-}sales_{t-1}$	−0.000*	−0.000	0.000	0.000
	(−1.69)	(−0.29)	(0.27)	(0.59)
Foreign sales-to-sales	0.004***	0.001	0.001***	0.000
	(4.63)	(0.64)	(4.04)	(0.21)
RD-to-sales	−0.006***	0.001	−0.000	0.000
	(−2.61)	(0.19)	(−0.47)	(0.03)
$Capex\text{-}to\text{-}assets_{t-1}$	−0.002	0.002	0.000	0.014***
	(−1.22)	(0.47)	(0.06)	(3.60)
Closely-held	0.000	0.000	0.000	0.001
	(0.04)	(0.13)	(1.02)	(0.23)
ADR	0.207**	0.034	0.032*	0.114
	(2.32)	(0.24)	(1.82)	(0.78)
ROA	0.001	0.001	0.000	0.001
	(0.65)	(0.50)	(1.39)	(0.22)
Log GDP per Capita	0.049	0.121	0.016	0.227
	(0.69)	(0.84)	(1.19)	(1.50)
GDP Growth	−0.068***	−0.127***	−0.012***	−0.117***
	(−3.26)	(−3.51)	(−3.80)	(−3.27)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	21,060	9597	15,767	1776
Pseudo R^2	0.252	0.141	0.254	0.188
# of countries	43	43	43	42

Panel B – descriptive statistics of treatment (*Treat*) and control firms

	Full sample			Matched sample		
	Treat	Control	ΔX	*Treat*	Control	ΔX
Size	22.27	22.27	0.00	22.27	22.20	0.03
Age	3.04	3.02	0.01	3.04	2.98	0.05
Leverage	24.45	22.69	0.08	24.45	24.87	−0.02
Cash-to-assets	7.38	8.25	−0.07	7.38	7.50	−0.01
PPE-to-sales	86.57	120.88	−0.16	86.57	91.95	−0.03
Foreign sales-to-sales	52.54	32.81	0.44	52.54	52.97	−0.01

(continued)

Panel B – descriptive statistics of treatment (*Treat*) and control firms						
	Full sample			Matched sample		
	Treat	Control	ΔX	*Treat*	Control	ΔX
RD-to-sales	2.13	2.60	−0.07	2.13	1.91	0.03
Capex-to-assets	5.21	5.95	−0.10	5.21	5.30	−0.01
Closely-Held %	24.31	24.70	−0.01	24.31	26.63	−0.07
ADR	0.36	0.15	0.36	0.36	0.35	0.01
ROA	7.12	6.74	0.03	7.12	7.03	0.01

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