



ELSEVIER

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Finance Research Letters

journal homepage: www.elsevier.com/locate/frl

Where does corporate social capital matter the most? Evidence From the COVID-19 crisis

Franco Fiordelisi^{a, #}, Giuseppe Galloppo^b, Gabriele Lattanzio^{c, *}

^a Essex Business School, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, United Kingdom

^b Department of Economics and Business, University of Viterbo La Tuscia, Via del Paradiso 47, 01100 Viterbo, Italy

^c Nazarbayev University, Department of Finance, Turan Ave, Nur-Sultan 0200000, Kazakhstan

ARTICLE INFO

JEL classification:

G11
G12
G18

Keywords:

Corporate social capital
Labor market rigidity
Reputational capital
COVID-19
Stakeholders

ABSTRACT

Firms with high social capital systematically outperform their peers during periods of economic distress. Yet, it is not clear under which institutional conditions corporate social capital is the most valuable to shareholders. By studying the performance of 1,789 firms in 27 countries during the initial phases of the COVID-19 pandemic, we document that the resilience effect of social capital is heterogeneous across countries. We identify the flexibility of a country's labor market as a critical determinant of corporate's returns on social capital-related investments. These findings are consistent with social capital hedging firms against systematic shocks by mitigating employee-related litigation risk.

1. Introduction

Social capital and trust are critical determinants of an economy long term economic and financial development (Guiso et al., 2004; 2008). This effect emerges at the microeconomic level as well, as recent studies document that firms with high social capital level are more resilient to systemic shocks than their peers (Lins et al., 2017; 2019; Manabe and Nakagawa, 2021).¹ Yet, firms' ability and propensity to accumulate social capital through investments in Corporate Social Responsibility (CSR) are widely heterogeneous across countries (Zama, Jain, Samara, Jamali, 2020). Investments in CSR are indeed systematically more pronounced in civil law countries, as they allow to "safeguard" a firm's fiduciary duty as mandated by law in those economies featuring stronger regulations and government interventions on stakeholder issues (Liang and Renneboog, 2017). Such a heterogeneity in CSR investments calls into questions whether the role of social capital as an insurance against systemic risk is heterogeneous across country as well, and, if that is the case, what are the underlying causes of such cross-country differences. As sophisticated investors' demand for resilience assets keep increasing (Pagano et al., 2021), the objective of this paper is to address these important questions.

The identification of the resiliency implications of social capital and trust is challenging for two main reasons. First, measuring firm-level social capital homogeneously across countries is not straightforward (Scrivens and Smith 2013; Liang and Renneboog, 2017). Second, the identification of systemic shocks affecting social capital in different economies in a similar fashion is complicated; yet,

* Corresponding author at: Nazarbayev University, Department of Finance, Turan Ave, Nur-Sultan 0200000, Kazakhstan.

E-mail address: gabriele.lattanzio@nu.edu.kz (G. Lattanzio).

University of Roma Tre, Department of Business Studies, Italy

¹ Social capital acts as an insurance against idiosyncratic firm-specific risks as well, allowing managers to mitigate eventual tensions with the firm's stakeholders (Minor (2015), Hong and Liskovich (2016), among others).

<https://doi.org/10.1016/j.frl.2021.102538>

Received 25 August 2021; Received in revised form 25 September 2021; Accepted 4 November 2021

Available online 10 November 2021

1544-6123/© 2021 Elsevier Inc. All rights reserved.

absent this exogenous variation in firm-level social capital it would be virtually impossible to shed lights on the eventual cross-country heterogeneity in the microeconomic effects of social capital on firms' resilience to systemic shocks. Building upon Lins et al. (2017; 2019), and Liang and Renneboog (2017), we address the first problem (a homogenous measurement of firm-level social capital) by recognizing that firms' CSR engagements are good proxies for their social capital. The recent COVID-19 pandemic enables us to address the second issue (having a systemic shock affecting social capital in different economies in a similar fashion). The pandemic virtually affected all countries, with governments opting to lock down their economy to contain the spreading of this viral diseases and public trust towards corporations suddenly declined to unprecedented low levels (Edelman Trust Barometer, Spring 2020).² This global shock allows us to extend the analyses reported in Lins et al. (2017) to 27 countries and to assess the conditions under which firms' social capital protect shareholders' value the most during period of low trust in corporations (Guiso et al., 2008).

We begin our analysis by replicating the main results documented in Lins et al. (2017) in a cross-country setting. Our estimates confirm that high social capital firms recorded significantly higher returns during the initial phases of the global pandemic, beyond the effects of a wide array of factors and firm characteristics.³ Differently from Lins et al. (2017), we document that CSR investments directed towards internal shareholders (employees) – rather than to external shareholders (environment) – play a central role at sustaining high corporate valuation level during the pandemic period.

To better understand the mechanisms determining the centrality of the social component of a firm ESG profile, we build on Liang and Renneboog (2017) and examine if and which institutional and legal factors help explaining the resiliency implications of corporate social capital. Specifically, we hypothesize and document that high social capital employers are able to better cope with systematic shocks as their positive relationship with their employees mitigate litigation and syndication risk, which are particularly pronounced in heavily regulated labor markets. Indeed, we show that high social capital corporations significantly outperform their low social capital peers in countries where firms face higher firing costs, more complicated dismissal procedures, and stronger labor and employment protection laws (Botero et al., 2004).

Our paper contributes to several strand of the literature. First, we show that the use of corporate social capital accumulated through investments in CSR as an insurance against systemic shocks is not limited to the United States (Lins et al., 2017; 2019). Second, we identify critical determinants of the resiliency implications of a firms' social capital by showing that institutional factors – namely a country legal origin (Liang and Renneboog, 2017) and labor market rigidity – are major determinants of ESG firms' stock market performance during sudden social and economic crisis. Finally, from an asset pricing perspective, our results show that the effectiveness of corporate social capital to ensure stock market returns against systemic shocks critically depends upon a country's legal framework. That is, our results show that the use of high-social capital firms as a hedging devise against black swan events is not homogenous across-countries. International CSR diversification might thus deliver significant improvement from a portfolio theory perspective (Liagkouras et al., 2020).

The rest of the paper is organized as follow. Section 2 reports and discusses the summary statistics of the selected variables. Section 3 reports our baseline results. Section 4 documents the role of an economy's labor market rigidity as a determinant of the resiliency effects of corporate social capital. Section 5 concludes.

2. Data and summary statistics

This study aims at analyzing if the role of social capital as an insurance against systemic risk is heterogeneous across country. Measuring corporate social capital in such a cross-country framework is problematic, as the selected proxy should reflect heterogeneity in corporate social engagements beyond the variation caused by institutional and cultural factors characterizing different economic environment. To overcome such limitation, we measure corporate social capital through the use of ESG scores obtained from Sustainalytics. This dataset contains transparent, data-driven, and cross-country comparable scores evaluating corporates' Environmental, Social, and Governance performance accounting for materiality considerations and eventual company size biases (Khan et al., 2021). The resulting sample include 1789 firms from 27 countries.⁴

We collect from Thomson Reuters Refinitiv stock market returns for each firm included in the sample for the period of propagation of the first COVID-19 wave, from February 1st, 2020 to April 10th, 2020.⁵ We rely on a market model to extract abnormal returns for the period of interests by following the common procedure indicated in Campbell et al. (1997).⁶

² The Spring 2020 Edelman Survey covers 11 countries, documenting that public trust towards corporations has significantly declined since the beginning of the health crisis in January 2020. It shows that – for the first time since 2011 – public trust towards government is higher than towards private corporations, highlighting an historical paradigm shift which is taking place internationally.

³ Kinateder, Campbell and Choudhury (2021) investigate the correlation within the major asset classes among the Global Financial Crisis and COVID-19's 100 days. They identify a noteworthy degradation of co-relationship within the asset classes, especially when around spikes in the VIX index. Their results show that gold, US, UK, and German sovereign bonds are the safest options for investors during large economic shocks. Our paper differs from their study as we study differences in resilience within a single asset class – namely, publicly traded stocks – as a function of specific corporate investments.

⁴ Table A.1 in the Appendix confirms the existence of the significant degree of cross-country heterogeneity in firms' average ESG ratings documented in Liang and Renneboog (2017).

⁵ These dates are selected to capture the first 100 days of global response to the pandemics, following WHO definitions provided at the following link: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.

⁶ Market returns are proxied by the S&P500 returns for the US, DAX returns for Germany, CAC40 France, etc. To deal with the international nature of our sample, we match each firm with a specific market portfolio representing the main equity index of the firms' country of incorporation. The market model is estimated over a 252-trading day estimation period, ending 20 days before the beginning of the studied event.

Table 1 reports summary statistics for firms' stock market performance over the studied period. Consistent with findings reported in Baker et al. (2020) and Kinateder et al. (2021), the negative market reaction observed worldwide is heterogeneous in magnitude, ranging from -3% in Mexico up to the -57% observed for the Brazilian BOVESPA stock market index. From a corporate social capital perspective, we observed that high social capital firms have – on average- outperformed their low social capital peers in virtually all countries covered by our sample. However, the difference in performance is economically small, as the mean raw (abnormal) returns for the two groups are -27% (-14%) and -28% (-16%), respectively.

We complete our dataset by including a wide array of firm- and country-level variables. Table 2 provides summary statistics.

3. Social capital as an insurance against systemic shocks

We begin our analyses by assessing whether the resiliency effect documented in Lins et al. (2017) holds in a cross-country setting. Establishing these results in global financial markets is indeed crucial in lights of recent findings documenting that firms' propensity to invest in CSR engagements is widely heterogeneous across countries, calling into questions if the financial and economic consequences of these investments are heterogeneous across country as well (Liang and Renneboog, 2017; Lopez De Silanes et al., 2019).⁷

To test for this possibility, we estimate several regression models of buy-and-hold stock returns during the initial phase of the COVID-19 pandemic as a function of pre-crisis corporate ESG engagements, proxying for corporate social capital. Following the identification strategy discussed in Lins et al. (2017, 2019), the pandemic shock acts as an exogenous systemic shock affecting corporate social capital in different economies in a similar fashion. Since CSR levels are fixed in the short term, such an approach allows us to directly observe how international investors adjust their valuations of firms with different degree of social engagement.

Table 3, Panel A, reports our baseline specifications. The dependent variable in column (1) to (4) ((5) to (8)) is the *Raw Returns* (*Abnormal Returns*) reported by a firm included in our sample over the period February 1, 2020 – April 10, 2020.⁸ Our variable of interest is *ESG*, a dummy identifying firms receiving from Sustainalytics an ESG Score of A or higher as at the end of 2019.

Consistent with Lins et al. (2017), column (1) and column (5) document that firms with higher ESG scores performed – on average – significantly better during the recent pandemic, both in raw returns and in risk adjusted terms. The documented gains are economically significant, as being awarded with an A or an A+ grade from Sustainalytics is associated with a 11.9 percentage point increase in raw returns and a 6.03 percentage point increase in abnormal returns during the recent crisis. Furthermore consistent with Lins et al. (2017), these preliminary assessments confirm that all three ESG pillars contribute synergistically to protecting shareholders value.

Yet, the observed associations between corporate social capital and crisis returns may be caused by omitted variables correlated with firms' ESG engagement, rather than to their social capital level. In order to mitigate this crucial concern, Panel B replicates the baseline results reported Lins et al. (2017), Table 2, by incorporating in our specification controls for a firm's financial health as observed at the end of 2019 and thus capturing investors' information set as at the onset of the COVID-19 pandemic.⁹ We also include industry fixed effects,¹⁰ as some industries may have specific CSR standards (Lattanzio and Litov, 2021) and may have been affected by the COVID-19 in a unique fashion (Pagano et al., 2021). Furthermore, we recognize that the use of a cross-country setting requires a careful examination of potential institutional, cultural, and economic factors which might have affected firms' market performance during the recent economic downturn. First, Liang and Renneboog (2017) document that firms' propensity to engage in CSR activity is strictly interconnected with a country's institutional framework, and, namely, with its legal origins. We thus include legal origins fixed effects in our specifications. To further control for country specific factors which might correlate with the intensity of the analyzed health crisis, as well as with the ability of corporations to cope with economic downturn, we include country random effects. The use of random effects allows us to assess potentially critical cross-country determinants of the effectiveness of ESG investments as an insurance against systemic shocks. However, it requires the use of an extensive set of control variables absorbing potentially confounding macroeconomic factors. In particular, we explicitly control for the natural log of a country GDP; attitude towards international trade (Trade Openness); shareholders rights, proxied by the Anti-Self-Dealing Index developed in Djankov et al. (2007); the Corruption Index, developed by Transparency International and describing the extent and severity of corruption issues in a country; and the Politi IV Index, a score ranging between -10 and 10 and summarizing the quality and democraticness of a country's political and economic institutions.

Table 3, Panel B reports our estimate. The effect of ESG engagement is completely absorbed by the used set of control variables. The previously identified resiliency effect is muted by the irrelevance of the Environmental and Corporate Governance pillars. Conversely, the Social pillar remain strongly associated with a stronger stock market performance. Being awarded an A or an A+ ratings for social

⁷ Recent studies have investigated the economic and financial consequences of different types of corporate social engagements in global financial markets. For instance, Kinateder, Choudhury, Zaman, Scagnelli, and Soehel (2021) use an international sample of financial firms to document that boardroom gender diversity is associated to lower credit risk.

⁸ The World Health Organization declared the COVID-19 and international health crisis on February 1, 2020.

⁹ In particular, we include controls for a firm's financial flexibility, namely Cash Holdings, measured as cash and marketable securities divided by total assets; Leverage, computed as long-term debt divided by total assets; Profitability (ROA), measured as operating income before interest and taxes divided by assets; Size, measured as the natural log of a firm's market capitalization; Book-to-Market, computed as book value of equity divided by market value of equity; a Momentum Factor, measured as the raw returns recorded by a firm over the 12 months preceding the pandemic (Lins et al., 2017); a Negative Book-to-Market ratio dummy, aimed at identifying firms which are likely distressed and whose returns may thus behave more like those of high book-to-market firms than low book-to-market firms (Fama and French, 1992); and a firm's Idiosyncratic risk, measured as the residual variance from the market model estimated over the 12 months preceding the onset of the recent health crisis.

¹⁰ Industry Fixed Effects are defined based upon the Datastream industry definition.

Table 1
Social Capital and Stock Market Performance During the Covid-19 Crisis.

Panel A				
Variable	Mean	St. Dev		
Crisis Returns	-0.285	0.348		
Crisis Abnormal Returns	-0.150	0.171		
Panel B				
Index	Raw Returns		Abnormal Returns	
	Low ESG Score	High ESG Score	Low ESG Score	High ESG Score
S&P500 (US)	-0.441	-0.429	-0.236	-0.239
Kospi (Korea)	-0.253	-0.325	-0.131	-0.129
ASX300 (Australia)	-0.472	-0.287	-0.322	-0.390
Nikkei225 (Japan)	-0.497	-0.599	-0.130	-0.112
EuroStoxx600 (Europe)	-0.031	-0.040	-0.031	-0.036
FTSE All Share (Uk)	-0.293	-0.372	-0.190	-0.189
SSE (China)	-0.337	-0.312	-0.067	-0.059
S&P TSX (Canada)	-0.030	-0.017	-0.015	-0.016
S&P Merval (Argentina)	-0.034	-0.056	-0.030	-0.056
Bovespa (Brazil)	-0.569	-0.786	-0.367	-0.489
Moex (Russia)	-0.612	-0.352	-0.068	-0.112
Nifty500 (India)	-0.495	-0.309	-0.454	-0.194
IDX (Indonesia)	-0.041	-0.024	-0.432	-0.019
MSCI Mexico (Mexico)	-0.027	-0.005	-0.013	-0.005
BIST National 100 (Turkey)	-0.032	-0.041	-0.026	-0.019
FTSE JSE (Rep. South Africa)	-0.337	-0.408	-0.111	-0.158

Table 1 reports summary statistics for firms' stock market performance over the period February 1st, 2020 – April 10th, 2020. Crisis returns are buy and hold returns. Crisis Abnormal Returns are buy-and-hold returns computed based on a market model estimated over the calendar year 2019, using exchange-specific indexes as appropriate market portfolios. Panel A reports results for the full sample. Panel B reports exchange-specific evidence.

Table 2
Summary Statistics.

Panel A: ESG Engagement					
Variable	Mean	St. Dev	Civil Law	Common Law	Others
ESG Score	60.941	17.3300	56.1062	53.7200	61.9219
Env Score	62.447	21.9200	55.8293	52.1500	63.8301
Social Score	60.477	20.4600	59.0578	57.9300	63.4167
Governance Score	62.421	20.7100	54.9554	53.0600	61.0644
ESG - A rating	0.148	0.3550	0.0638	0.0490	0.1623
Environmental - A rating	0.258	0.2588	0.1985	0.1127	0.1987
Social - A rating	0.226	0.2264	0.1849	0.0637	0.2431
Governance - A rating	0.185	0.1854	0.1063	0.0882	0.2752
Panel B: Summary Statistics					
Variables	Mean	Standard deviation	Min	Max	
Crisis Abnormal Returns	-0.149	0.171	-1.017	0.393	
ESG Score - A grade	0.151	0.349	0.000	1.000	
Legal Origin - Common Law	0.114	0.317	0.000	1.000	
Legal Origin - German	0.228	0.415	0.000	1.000	
Log GDP	28.911	1.218	26.630	30.647	
Trade Openness	46.2000	16.42	27.540	83.000	
Anti-Self-Dealing Index	0.6666	0.167	0.180	0.930	
Polity IV Index	7.4962	4.482	-7.000	10.000	
Corruption Index	1.2302	0.953	-0.843	2.268	
Leverage	0.2300	0.161	0.001	0.428	
Cash Holdings	0.0647	0.054	0.000	0.133	
Profitability	0.5389	0.410	-0.293	1.061	
Log Market Index	21.0640	11.114	11.694	103.083	
Market-to-Book Ratio	1.6146	63.118	-2682.330	494.961	
Negative MtB	0.0107	0.121	0.000	1.000	
Momentum	0.0287	0.129	-0.871	0.643	
Idiosyncratic Risk	-0.2163	0.411	-0.953	0.765	

Table 2, Panel A reports summary statistics for firms' ESG engagements as observed at the end of 2019. The ESG, environmental, social, and corporate governance score are from Sustainalytics. As indicated by 1,789 firms with a score of 8.2 or higher are awarded with an A grade. Table 2, Panel B reports summary statistics for all variables included in our sample. Variables are defined in Appendix B, and they represent values as observed at the end of calendar year 2019. All variables are winsorized at the 2.5%, on both tails.

TABLE 3
Crisis-Period Returns and Social Capital: a Cross-Country Analysis.

Panel A: ESG Score and Crisis-Period Returns								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable=	Raw Returns				Abnormal Returns			
ESG	0.119*** (0.019)				0.060*** (0.009)			
Social Pillar		0.097*** (0.016)				0.047*** (0.008)		
Environmental Pillar			0.095*** (0.015)				0.047*** (0.007)	
Corporate Governance Pillar				0.077*** (0.017)				0.043*** (0.008)
Constant	-0.303*** (0.007)	-0.307*** (0.008)	-0.310*** (0.008)	-0.300*** (0.007)	-0.159*** (0.004)	-0.160*** (0.004)	-0.162*** (0.004)	-0.158*** (0.004)
Observations	2,685	2,685	2,685	2,685	2,685	2,685	2,685	2,685
Adjusted R-squared	0.015	0.013	0.014	0.007	0.015	0.013	0.014	0.009
Panel B: ESG Score and Crisis-Period Returns - With Control Variables								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable =	Raw Returns				Abnormal Returns			
ESG	0.035 (0.031)				0.013 (0.0124)			
Social Pillar		0.041** (0.024)				0.017** (0.009)		
Environmental Pillar			0.019 (0.023)				-0.001 (0.009)	
Corporate Governance Pillar				0.028 (0.024)				0.013 (0.009)
Log GDP	0.022 (0.015)	0.022 (0.014)	0.022 (0.014)	0.023 (0.014)	0.042*** (0.005)	0.042*** (0.006)	0.043*** (0.006)	0.042*** (0.006)
Trade Openness	0.008*** (0.001)	0.008*** (0.001)	0.008*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)
Anti-Self-Dealing Index	-0.190** (0.089)	-0.195** (0.089)	-0.187** (0.089)	-0.191** (0.089)	-0.049 (0.035)	-0.051 (0.035)	-0.049 (0.035)	-0.049 (0.035)
Politi IV	-0.008** (0.003)	-0.009** (0.003)	-0.008** (0.003)	-0.008** (0.003)	-0.001 (0.001)	-0.001 (0.001)	-0.0002 (0.0014)	-0.001 (0.001)
Corruption Index	0.057*** (0.020)	0.059*** (0.020)	0.058*** (0.020)	0.057*** (0.020)	0.014* (0.008)	0.015* (0.008)	0.0137* (0.008)	0.014* (0.008)
Leverage	-0.056 (0.052)	-0.060 (0.052)	-0.056 (0.052)	-0.0572 (0.0521)	-0.031 (0.021)	-0.033 (0.021)	-0.032 (0.021)	-0.032 (0.021)
Momentum	-0.004 (0.065)	0.001 (0.065)	-0.001 (0.065)	-0.0025 (0.065)	0.118*** (0.026)	0.119*** (0.026)	0.119*** (0.026)	0.118*** (0.026)
Additional Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legal Origins FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country RE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,789	1,789	1,789	1,789	1,789	1,789	1,789	1,789
Adjusted R-squared	0.116	0.117	0.116	0.116	0.389	0.390	0.388	0.389

This table presents regression estimates of crisis-period returns on CSR and control variables. Crisis-period returns are measured as both raw buy and hold returns and abnormal returns over the period February 1 2020, - April 10 2020,. ESG is a dummy set equal to 1 if a corporation has a grade of A (ESG score=8.2 or higher) according to Sustainalytics, as measured as the end of 2019. Social Pillar, Environmental Pillar, and Corporate Governance Pillar are similarly defined. Industry dummies are built based on the DataStream international industry definitions, and all control variables are defined in Appendix A. All variables are Winsorized at the 2.5% level, unless differently specified. Additional controls include Market to Book, Idiosyncratic Risk, Negative MtB, Cash Holdings, Market Capitalization, and ROA. Standard errors are clustered at the country level, and they are reported in parenthesis. *, **, *** indicates statistical significance at the 10%, 5%, and 1%, respectively.

engagement is associated with a 4.68 percentage point and a 4.10 (1.79) percentage point increase in buy and hold raw (abnormal) returns during the recent crisis.

These results highlight a first interesting difference between our cross-country findings and [Lins et al. \(2017\)](#) U.S. specific estimates. While [Lins et al. \(2017\)](#) suggests that both corporate social capital specific to internal stakeholders (employees) and to external stakeholders (environmental) sustain firms valuations during period of low trust towards the corporate world, our findings suggest that the former is a crucial driver of ESG firms' outperformance during the recent pandemic, globally.¹¹ This difference hints that a crucial

¹¹ Refinitiv captures over 500 company-level ESG measures, grouped into 10 categories that reformulate the threepillar scores and the final ESG score. The social pillar is based over 4 categories, namely: Community, Human rights, Product Responsibility and Workforce. The latter contributes the most to the Social Score. The category weight related to Workforce is the largest of the 4 categories coupled to the Social Pillar, so that the social pillar is mostly "Employee" related.

determinant of the previously documented heterogeneous performance of high social capital firms in different countries might thus be related to the legal structure of the relevant labor market, which may indeed induce tensions between employers and employees.

4. Labor market rigidity and social capital

Modern economic systems rely on human and intangible capital accumulation to create long-term value for all relevant stakeholders (Edmans, 2011; Palacios, 2015; Chen, 2012). Human capital retention is thus particularly important during period of severe social and economic crisis, as retaining talented employees while safeguarding a firms' financial stability is crucial to avoid that a sudden systemic shock might trigger economic distress in the long run. For this reason, corporate social capital accumulation might play a crucial role for the creating of a strong relationship between employers and employees, facilitating human capital retentions and increasing employees' commitment towards their employer in the long run. Building upon the findings reported in Liang and Renneboog (2017), we hypothesize that the effectiveness of ESG engagements at creating positive long-term relations between employees and employers might depends upon the institutional framework characterizing the labor market faced by the firm. On the one hand, corporate social capital might substitute for the lack of a clear and rigid regulatory framework protecting employees' jobs during period of economic downturn. Absent such legal structure, employees might indeed take into consideration their lack of bargaining power and be less willing to cooperate with an employer absent a strong observable signal indicating that such a commitment is biunivocal. That is, we hypothesize that investments in ESG – and, in particular, in its social component – offer the greatest returns during period of economic downturn in economies with a fluid and employer-oriented labor market. (“Bonding Hypothesis”). Alternatively, firms facing heavily regulated labor market might benefit from their ESG investments by creating a positive relationship with their employees by facilitating eventual direct or union-mediated bargaining processes during period of economic and social crisis, ultimately mitigating litigation and syndication risk (“Labor Market Rigidity Hypothesis”).

To disentangle these two conflicting hypotheses we assess whether the superior resiliency of ESG firms hinges upon the structure and flexibility of their national labor market, measured following Botero et al. (2004) as corporate firing costs, complexity of

Table 4
Labor Market Rigidity & ESG Firms Performance During Economic Crisis.

<i>Dependent variable =</i>	(1) Abnormal Returns	(2)	(3)	(4)	(5)	(6)
ESG	−0.006 (0.013)		−0.011 (0.013)		−0.009 (0.013)	
Social Pillar		0.001 (0.010)		−0.002 (0.010)		0.001 (0.010)
ESG x Firing Costs	0.0761*** (0.027)					
Firing Costs	−0.279*** (0.018)	−0.280*** (0.018)				
Soc. Pillar x Firing Costs		0.052** (0.022)				
Labor Rigidity x ESG			0.086*** (0.025)			
Labor Rigidity			−0.424*** (0.020)	−0.427*** (0.020)		
Labor Rigidity x Soc. Pillar				0.062*** (0.020)		
ESG x Dismissal					0.078*** (0.027)	
Dismissal					−0.299*** (0.016)	−0.300*** (0.016)
Dismissal x Social Pillar						0.047** (0.021)
Additional Controls	Yes	Yes	Yes	Yes	Yes	Yes
Legal Origins FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country RE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,789	1,789	1,789	1,789	1,789	1,789
Adjusted R-squared	0.465	0.465	0.518	0.517	0.485	0.484

This table presents regression estimates of crisis-period returns on CSR and control variables. Crisis-period returns are measured as abnormal returns over the period February 1 2020, - April 10 2020,. ESG is a dummy set equal to 1 if a corporation has a grade of A (ESG score=8.2 or higher) according to Sustainalytics, as measured as the end of 2019. Social Pillar, Environmental Pillar, and Corporate Governance Pillar are similarly defined. Firing Costs, Labor law rigidity and Dismissal Costs are proxies for a country labor market structure, and they are defined as in Botero et al. (2004). Industry dummies are built based on the DataStream international industry definitions, and all control variables are defined in Appendix A. Control variables are the same as those used in Table 3, Panel B. All variables are Winsorized at the 2.5% level, unless differently specified. Standard errors are clustered at the country level, and they are reported in parenthesis. *, **, *** indicates statistical significance at the 10%, 5%, and 1%, respectively.

Table 5
Alternative Measures of Social Capital.

<i>Dependent variable =</i>	(1)	(2)	(3)	(4)	(5)	(6)
	Crisis Period Abnormal Returns					
Highest Decile (ESG)	-0.008 (0.009)		-0.010 (0.009)		-0.009 (0.009)	
High Firing Costs (<i>H</i>)	-0.283*** (0.018)	-0.282*** (0.018)				
Higher Decile (ESG) x <i>H</i>	0.048** (0.023)					
Higher Quartile (ESG)		-0.003 (0.008)		-0.004 (0.008)		-0.005 (0.008)
Higher Quartile (ESG) x <i>H</i>		0.036* (0.021)				
Labor Rigidity (<i>R</i>)			-0.428*** (0.020)	-0.425*** (0.020)		
Higher Decile (ESG) x <i>R</i>			0.056*** (0.020)			
Higher Quartile (ESG) x <i>R</i>				0.039** (0.019)		
Dismissal (<i>Z</i>)					-0.303*** (0.0170)	-0.302*** (0.017)
Higher Decile (ESG) x <i>Z</i>					0.044** (0.021)	
Higher Quartile (ESG) x <i>Z</i>						0.033 (0.021)
Additional Controls	Yes	Yes	Yes	Yes	Yes	Yes
Legal Origins FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country RE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,789	1,789	1,789	1,789	1,789	1,789
Adjusted R-squared	0.463	0.462	0.515	0.514	0.482	0.482

This table presents regression estimates of crisis-period returns on CSR and control variables. Crisis-period returns are measured as abnormal returns over the period February 1 2020, - April 10 2020,. ESG highest decile (quartile) is a dummy set equal to 1 if a corporation has a grade of ESG score belonging to the highest decile (quartile) in a given country according to Sustainalytics, as measured as the end of 2019. Social Pillar, Environmental Pillar, and Corporate Governance Pillar are similarly defined. Firing Costs, Labor law rigidity and Dismissal Costs are proxies for a country labor market structure, and they are defined as in [Botero et al. \(2004\)](#). Industry dummies are built based on the DataStream international industry definitions. Control variables are the same as those used in [Table 3](#), Panel B. All variables are Winsorized at the 2.5% level, unless differently specified. Standard errors are clustered at the country level, and they are reported in parenthesis. *, **, *** indicates statistical significance at the 10%, 5%, and 1%, respectively.

employees' dismissal procedures, and the strength of labor and employment protection laws. In particular, we interact these three proxies with the ESG Score (and, in particular, with the Social Pillar) to assess whether this dimension explains the previously documented cross-country differences in returns to social capital accumulation during period of social and economic stress.

[Table 4](#) reports our estimates, proving support for the "labor market rigidity hypothesis". In all specification both the overall ESG score and the Social pillar provides an effective insurance against the economic and financial effects of a systemic shock – the COVID-19 pandemic – for those firms operating in strictly regulated labor markets, exclusively. [Table 5](#) confirms the robustness of the documented results to different measures of corporate ESG engagements, namely a dummy identifying firms in the highest decile or quartile by their comprehensive ESG score. We conclude that firms facing a heavily regulated labor market benefit from their ESG investments as they improve the relationship with their employees by facilitating eventual direct or union-mediated bargaining processes during period of economic and social crisis.

Appendix A reports mean ESG score levels as reported in Sustainalytics. This value represents country-specific average corporate social responsibility engagements as at the end of calendar year 2019.

	Average ESG Score – Sustainalytics
Argentina	51.306
Australia	55.872
Austria	67.571
Belgium	67.047
Brazil	59.279
Canada	58.085
China	44.155
Denmark	68.665

(continued on next page)

(continued)

	Average ESG Score – Sustainalytics
Finland	70.142
France	74.107
Germany	55.825
India	58.439
Indonesia	55.607
Italy	69.684
Japan	65.585
Korea	54.357
Mexico	56.067
Netherlands	68.053
Norway	69.733
Portugal	76.590
Russia	56.699
Spain	65.653
Sweden	67.626
Switzerland	63.232
Turkey	58.171
UK	55.816
USA	68.259

5. Conclusions and regulatory implications

We provide evidence that the use of corporate social capital accumulated through investments in CSR as an insurance against systemic shocks is not limited to the United States. In particular, we document that such an effect is widely heterogeneous across countries, showing for the first time that institutional factors and, namely, the rigidity of an economy's labor market, are major determinants of ESG firms stock market performance during sudden social and economic crises. We interpret these findings as consistent with our "Labor Market Rigidity Hypothesis": firms facing heavily regulated labor market benefit from their corporate social capital as it contributes to creating a positive relationship with their employees, facilitating eventual direct or union-mediated bargaining processes during period of economic and social tension.

From a regulatory perspectives, policymakers should thus not ignore that corporate social capital emerges as a strategic response to strictly regulated labor markets; incentivizing firms' social engagements is thus crucial to build a resilient economic environment and to ease domestic major employers to be able to retain human capital during period of economic and social crisis.

Declaration of Competing Interest

None.

Funding Sources

None.

References

- Baker, S.R., Bloom, N., Davis, S.J., Kost, K., Sammon, M., Viratyosin, T., 2020. The Unprecedented Stock Market Reaction to COVID-19. *The Review of Asset Pricing Studies* 10, 742–758.
- Botero, J.C., Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2004. The Regulation of Labor. *Quart. J. Econ.* 119 (4), 1339–1382.
- Campbell, J.Y., Lo, A.W., MacKinlay, C., 1997. *The Econometrics of Financial Markets*. Princeton University Press.
- Chen, H., 2012. Social Status, Human Capital Formation and The Long-Run Effects of Money. *J. Econ.* 105 (3), 225–246.
- Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2007. The law and economics of self-dealing. *J. Financ. Econ.* 88, 430–465.
- Edmans, A., 2011. Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices. *J. Financ. Econ.* 101, 621–640.
- Fama, E., French, K.R., 1992. The Cross-Section of Expected Stock Returns. *J. Financ.* 47 (2), 427–465.
- Guiso, L., Sapienza, P., Zingales, L., 2004. The Role of Social Capital in Financial Development. *Am. Econ. Rev.* 94 (3), 526–556.
- Guiso, L., Sapienza, P., Zingales, L., 2008. Social Capital as Good Culture. *J. Eur. Econ. Assoc.* 6 (2–3), 295–320.
- Khan, M., Serafeim, G., Yoon, A., 2021. Corporate Sustainability: First Evidence on Materiality. *Account. Rev.* 91 (6), 1697–1724.
- Kinateder, H., Choudhury, T., Zaman, R., Scagnelli, S.D., Sohel, N., 2021. Does Boardroom Gender Diversity decrease Credit Risk in the Financial Sector? *Worldwide Evidence. J. Int. Financ. Mark.* 73, 101347. Institutions, and Money.
- Kinateder, H., Campbell, R., Choudhury, T., 2021. Safe haven in GFC versus COVID-19: 100 turbulent days in the financial markets. *Financ. Res. Lett.*, 101951
- Lattanzio, G., Litov, L.P., 2021. Corporate Purpose and Value: Evidence from a Novel Measure of Environmental Awareness. Working Paper.
- Liagkouras, K., Metaxiotis, K., Tsihrintzis, G., 2020. Incorporating Environmental and Social Considerations into the Portfolio Optimization Process. *Ann. Oper. Res.* 1–26.
- Liang, H., Renneboog, L., 2017. On the Foundations of Corporate Social Responsibility. *J. Financ.* 72 (2), 853–910.
- Lins, K.V., Servaes, H., Tamayo, A., 2017. Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility During the Financial Crisis. *J. Financ.* 72 (4), 1785–1824.
- Lins, K.V., Servaes, H., Tamayo, A., 2019. Social Capital, Trust, and Corporate Performance: How CSR Helped Companies During the Financial Crisis (and Why it Can Keep Helping Them). *J. Appl. Corp. Financ.* 31 (2), 59–71.

- Lopez De Silanes, F., McCahery, J.A., Pudschedl, P.C., 2019. ESG Performance and Disclosure: A Cross-Country Analysis. European Corporate Governance Institute – Law. Working Paper No. 481/2019.
- Manabe, T., Nakagawa, K., 2021. The Value Of Reputation Capital During the COVID-19 Crisis: Evidence From Japan. Finance Research Letters, Forthcoming.
- Pagano, M., Wagner, C., Zechner, J., 2021. Disaster Resilience and Asset Prices. Working Paper.
- Palacios, Miguel., 2015. Human Capital as an Asset Class Implications From a General Equilibrium Model. Rev. Financ. Stud. 28 (4), 978–1023.
- Scrivens, K., Smith, C., 2013. Four Interpretations of Social Capital. An Agenda for Measurement. OECD Statistics Working Paper, 2013/06.