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The Impact of Social Capital on Firm Value

Michele Nascimento Jucá¹ and Albert Fishlow²

ABSTRACT

Social capital and value creation are concepts that have been associated in financial literature for a long time and still remain controversial. Social capital refers to a firm's attributes, such as trust, civic attitudes, and relationship networks that enable greater economic development. It is also related to corporate social responsibility, corresponding to a voluntary interest by firms in social and environmental issues with effects upon others. The last global financial crisis - which began in the United States in 2007 - is an exogenous event that allows a study of the impact of a higher level of corporate credibility. In other words, we may verify whether attributes such as trust - measured by social capital - create value. Thus, this study aims at verifying if there was a positive relationship between social capital and corporate value, during the last global financial crisis. To this end, a difference-in-difference test was applied to a sample of 418 Latin American firms. The results confirm the hypothesis that in a financial crisis, firms with more social capital have their value less affected. This fact points to practical implications both for investors and capital market regulators.

KEY WORDS: social capital, corporate social responsibility, firm value, financial crisis, ESG score.

JEL Classification: G32, E22, N26, G3.

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1. Introduction

The existence of capital markets, as well as of institutions that perform audits and regulate rating agencies require trust by investors on their agents. Trust, network, and social capital are concepts that have been linked in financial literature for quite some time. According to Putnam (1993), Paldam (2000), and Guiso et al. (2004), social capital refers to a firm's attributes, such as trust, civic attitudes, relationship networks and cooperation that enable greater economic development. Bourdier (1986) states that the volume of social capital depends on the size of a durable network connection, which may be converted into economic capital.

Coleman (1988) corroborates the idea that social capital is productive, like other types of capital. It arises through changes in relations among persons

that facilitate action. Burt (1997) and Hawe and Shiell (2000) mention that social capital has relational, material and political aspects, being a function of brokerage opportunities in a network. Finally, according to Paldam (2000), social capital is the ability of a group of people to work cooperatively around a common goal. Therefore, it is necessary that its members have mutual trust in each other, which generates individual benefits to all of them.

On the other hand, Jha and Cox (2015) and Servaes and Tamayo (2017) relate the concept of social capital to corporate social responsibility (CSR), corresponding to a voluntary interest by firms in social and environmental issues with effects upon others. To them, investments generally grouped under CSR could be considered as building blocks of a firm's social capital. Nevertheless, the impact of CSR on corporate value remains controversial.

Agency theory points to a positive relation between both, since CSR activities mitigate the conflict of interests between managers and other stakehold-

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ers, thereby improving firm's reputation and profitability (Fernández & González, 2017). However, CSR practices are costly, generating overinvestment concerns, especially during the financial crisis. Before the crisis, the benefit of CSR practices in solving conflicts outweighs their overinvestment effects. However, the relative importance of the overinvestment effect increases following the onset of the financial crisis due to the high cost of CSR practices' implementation (Harjoto, 2017; Buchanan et al., 2018).

Besides, according to Buchanan et al. (2018), before the crisis, CSR was positively related to value creation to firms with low participation of institutional investors in its ownership structure. The presence of institutional investors can improve firms' monitoring or corporate governance level. However, in a crisis scenario, the results show that this positive relation between CSR and firm value is significantly lower for the ones with high participation of institutional investors in its ownership structure. It suggests that the benefits of implementing CSR are higher for firms with low monitoring level. The last global financial crisis - which began in the United States in 2007 - is an exogenous event that allows a study of the impact of a higher level of corporate credibility. In other words, we may verify whether attributes such as trust - measured by social capital - create value.

Unlike other financial crises, this one originated in developed countries. Experience with previous systematic financial crises has contributed to the world undergoing a process of transformation in which emerging countries have stood out in producing and consuming of goods. In the case of Latin America, Brazil (34.5%), Mexico (19.3%), Argentina (10.7%), Colombia (5.2%), Chile (5%) stand out when considering a share equal to 78% in the region's Gross Domestic Product (GDP) in 2017 (World Bank, 2020a). According to Neira et al. (2016), social capital has been an increasingly important factor for the growth of Latin America.

This study seeks to determine if there was a positive relationship between social capital and corporate value during the last global financial crisis. To that end, a difference-in-differences test (DID) was applied to a sample of 418 Latin American firms or

4,180 observations; such data were collected in the previous (2003-2007) and subsequent (2008-2012) periods. Social capital was measured by means of a proxy related to the ESG Score, obtained from the Datastream database. This provides an index of activities developed by firms in the environmental, social and governance categories. Detecting firms with a high level of social capital took place in 2007, thus avoiding endogeneity to the crisis.

This article differs from that by Fernández and González (2017), who analyze the relationship between social capital and corporate value, by trust proxies and civic rules, obtained by countries. Studies by Lins et al. (2017); and Buchanan et al. (2018) employed this same relationship during the last global financial crisis; however, only for US firms. In addition, their models consider control variables at the corporate level only, and not at the macroeconomic level. In turn, Crisóstomo et al. (2011) analyze the relationship between CRS and the value of Brazilian firms over a period prior to the crisis, having detected negative values. This may be due to a problem of endogenous CRS and financial performance. Firms tend to do good when they do well and vice-versa. This problem can lead to an estimate bias in the relationship between CRS and value.

To the best of our knowledge, this work is the first to verify the effective impact on value creation, through socially responsible investments, in Latin American countries, at a time when capital market confidence was put to test. Social capital plays an important role in political and democratic definition within the region. An analysis of this relationship is fundamental for understanding the future economic development of Latin America.

2. Literature Review

The last global financial crisis began in 2007 in the United States through securitizing real estate mortgages from subprime bank clients. This last global financial crisis is different from the others in some aspects, as: (a) it did not start in emerging countries; (b) the significant reduction of Latin America's public overseas debt gave governments a chance to play a stabilizing role in private markets, and (c) new types of vulnerability arose, mainly associated with financial innovation and integration

rather than macroeconomic imbalances or banking sector deficiencies (Berger & Roman, 2015; Wojcik & Cojoianu, 2018). This crisis was a credibility test on institutions and of confidence in the capital market as a whole, providing an opportunity for analyzing the impact of investments in social capital on the creation of firm value.

For Putnam (1993), social capital is a public asset, unlike equity and investments by private third parties. La Porta et al. (1997) believe there is a positive relationship between the level of confidence in a country and its growth. For Servaes and Tamayo (2017), firms in countries with a high level of social capital project a level of trust and cooperation by their stakeholders. This raises their profitability and increases their value. Other items related to social capital are civic engagement, cooperation, politics, and corporate relations. Gupta et al. (2018) found that there is a negative relation between social capital and a firm's cost of equity. Therefore, the higher the social capital, the greater the firm value. Thus, social capital arises from such diverse origins as society, institutions, and individuals (Jha & Cox, 2015).

Bourdieu (1986) states that social capital is the combination between resources and a durable network of group members. Thus, the amount of social capital that a member has depends on the size of the network of connections he can effectively mobilize. Conversion of social into economic capital takes time. Social capital has to be maintained for a long time, relying on the quality of previous relationships to be converted into valuable assets. To Coleman (1988), social capital is completely intangible, since it results from changes in relations among persons that facilitates productive activity. It can be noted into three forms - obligations and expectations, information channels and social norms. Thus, there is a number of social structures that facilitate certain forms of social capital. Firms that preserve trustworthy relationships in stable scenario benefit in times of uncertainty.

Indeed et al. (2000) ratify the concept that social capital is the ability for obtaining benefits by being a member of a network or other social structure. Therefore, the relationship must be based on trust and cooperation, which in turn generates a system

of expectations and obligations. To these authors, as in economic capital, social capital is also durable and there are costs involved in its acquisition. An investment of energy and time is required to establish and maintain the necessary networks. To Burt (1997), "the structural hole theory gives concrete meaning to the concept of social capital". This theory implies that social capital provides an opportunity to join people. Without social capital, people will be disconnected in a social structure, being on opposite sides of the hole. The benefit of information and control brings value to a member network. Firms with high standards in disclosure policies develop a trusting relationship with their stakeholders, forming valuable social capital during economic crises.

Jha and Cox (2015) found a positive association between CSR and social capital. To them, social capital are norms and networks that benefit participants. Moreover, Servaes and Tamayo (2017) relate social capital to concepts such as trust and corporate culture. They discuss and propose various metrics that capture social capital at the firm level, including firms' CSR efforts. Therefore, in the study, measuring social capital at a corporate level occurs through CSR activities as an extension of the corporate governance model, in which managers represent the interests of capital owners, as well as of other stakeholders. According to Frederick (2018), CSR is an evolutionary process, defined by the changing attitudes and behaviors of firms, their stakeholders, and public policies. CSR metrics include economic, environmental, social, and corporate governance aspects, aligned with those of social capital - personal relationships, relationship networks, civic engagement, trust, and cooperation rules (Lins et al., 2017; OECD, 2020).

Investments in CSR represent, as viewed by Hoi et al. (2018) social, corporate attitudes that go beyond goals of maximizing immediate profit, and are intended to generate social benefits for stakeholders outside the firm. Studies confirm the perception that CSR activities have a positive effect on wealth generation for shareholders and other stakeholders, contributing to a firm's long-term profitability. Voluntary adoption of CSR practices enhances the quality of firm information and transparency.

Reduction of informational asymmetry between stakeholders implies a decrease in the cost of capital and an increase in the value of shares. Therefore, CSR firms have higher firm value than non-CSR firms (Cheng et al., 2014; Bhandari & Javakhadze, 2017; Buchanan et al., 2018; Feng et al., 2018; Li & Liu, 2018).

Agency theory is likewise associated with CSR practices. Managers tend to overinvest in CSR practices in order to enhance their reputation and to be recognized as socially responsible executives. This policy reduces the agency conflict between managers and shareholders, indeed. However, it does so at the expense of shareholders, suggesting a negative relationship between CSR and firm's value creation. On the other hand, CSR practices can improve communication between managers and non-investing stakeholders – for example, customers, employees, governments, and communities. This fact should reduce the information asymmetry between them, increasing firm's value. Nevertheless, for that to occur, the increase of operating margin should offset the high fixed costs of CSR practices' implementation (Deng et al., 2013; Jha & Cox, 2015; Harjoto, 2017; Buchanan et al., 2018).

In a financial crisis, firms are led to change their corporate decisions by resorting to new sources of financing, reducing expenses and cash holdings. In a scenario of uncertainties, customers reduce demand, which lowers the level of investment by firms, including CSR activities. Another aspect to be highlighted is intensified agency conflicts that generate increased cost of CSR activities (Campello et al., 2012; Ivashina & Scharfstein, 2010; Kahle & Stulz, 2013; Bo et al., 2014, González, 2016). In addition, financial crises undermine confidence in institutions, the principles, and fundamentals of the market economy. This ends up by depreciating a firm's main asset - credibility at that moment in which being trustworthy is more valuable (Oh & Park, 2015; Buchanan et al., 2018). In view of the above, we posit the following hypothesis:

H1 - During a financial crisis, firms with more social capital have their value less affected.

3. Methodology

Center-periphery economic relation in the post-industrial age is also different from earlier stages in that it has no need of military coercion or colonial compulsion. It espouse

The final sample consists of 4,180 observations or data over 10 year of 418 publicly traded firms from the key Latin American countries - Argentina (42), Brazil (148), Chile (88), Colombia (16), Mexico (62), and Peru (62). All of these have positive total assets and equity during all the sample years. Financial firms (SIC codes 6000 to 6999) and public sector firms (SIC codes 9000 to 9999) are excluded, since they received exceptional government assistance during the financial crisis and/or their capital structure decision may reflect special factors. Manufacturing industries are rated by two-digit SIC codes. All the variables are clustered between the 1st and 99th percentile in order to mitigate the effects of outliers. Appendix A shows a summary of formulas and references in literature related to this study's variables. Here we limit the detail.

For the firm's value-dependent variable, the proxies of Tobin's Q are obtained from the base Capital IQ (CIQ). 2008 is the year of reference for the beginning of the crisis in countries other than the United States. The sample analyzes the first five years before - 2003 to 2007 - and after - 2008 to 2012 - the crisis in order to capture its impact on business value. The years after the crisis are marked with a dummy equal to one. In addition, a robustness test is carried out for the periods 2002-2007 (pre) and 2008-2013 (post), as well as for the periods 2004-2008 (pre) and 2009-2013 (post), to capture the lag effect of the crisis on firm value.

Classifying firms with a high CSR level took place in 2007 to assure it is endogenous to the crisis. CSR is measured by means of the ESG score, obtained from the Datastream database. This is composed of 3 pillars of 10 categories: (a) Environmental - resource reduction, emission reduction and product innovation; (b) Social - workforce, related to employment quality, health and safety, training and development, diversity, and opportunity; human rights, community and product responsibility; (c) Governance - management, related to board structure, compensation policy, board functions; shareholder rights and CSR strategy. The index ranges from 0 to 100. This variable is tested in a continuous form and by means of

a dummy, whose percentages above the country median are rated as one while below or equal to it are taken as zero.

Firm's control variables are lagged by a year to avoid coinciding with firm value, namely cash (CAS), leverage (LEV), profitability (PRO) and size (SIZ) and were also obtained from the CIQ base. Lins et al. (2017); and Buchanan et al. (2018) confirm the expected positive relation between cash and firm value. As for leverage, indebtedness restricts cash and allocation of a firm's results, reducing its value. Lins et al. (2017), Buchanan et al. (2018) and Hoi et al. (2018) also found a positive relationship between profitability and firm value. Finally, a negative relationship between size and Tobin's Q is expected. The size discount effect occurs in large firms with managers who impose excessive agency costs on their shareholders (Hoi et al., 2018).

Macroeconomic control variables are also lagged by one year, with GDP growth and country governance. Both are obtained from the World Bank (World Bank 2020a, 2020b). Country governance is measured by means of a proxy for global governance indicators (KKM), developed by a World Bank research group (Kaufmann et al., 2011). This index is derived from the average six-dimensional estimate - voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law and control of corruption. The estimate provides the country score for each dimension in units of a standard normal distribution, namely, varying approximately between -2.5 and 2.5. Thus, the higher the index value, the better. A positive relationship is expected between the two and firm value.

Initially, the variables in this study were analyzed through descriptive statistics, correlation analysis and a mean difference test. The differences-in-differences (DID) test was then applied. According to Angrist and Pischke (2008); Roberts and Whited (2013); and Lee (2016), DID is an analytical instrument that uses time and group dimensions to control unobserved omitted variables. The DID methodology is applied to compare firm value before and after the onset of the crisis. Moreover, it was assumed that firms with higher level of CSR, before the onset of the crisis, would have their value less affected when the overall level of trust in corporations and markets suffers a negative shock.

Both fixed effects and DID are based on the assumption of time-invariant omitted variables and may be used to limit the endogeneity of omitted variables. Thus, a possible correlation between explanatory variables and the error term, associated with countries, industries and firms are controlled by the consideration of fixed effects and a set of dummy variables in the regression model.

Hypotheses of this study are analyzed through Equation 1. Fixed-effect dummy variables are included to capture any heterogeneity resulting from omitted variables. The industry-year (λ_{jt}) effect controls possible shocks in specific industries, while country-year (θ_{kt}) controls shocks and changes in the institutional and regulatory environment in certain countries. The specific effect of a firm (γ_{ijkt}) controls omitted variables of firms, industries and countries that do not vary in time. In addition, standard errors are grouped by country - observations are independent among groups of countries (clusters), but not necessarily within them. Both adjustments provide control of specific effects of firms that are not observed. According to Petersen (2009), this last adjustment is more appropriate as it does not depend on whether or not individual effects are fixed.

$$Value_{i,t} = \alpha_0 + \alpha_1 Crisis_{it} + (\alpha_2 Crisis_{it} * CSR07_{it}) + \alpha_3 Firm\ controls_{i,t-1} + \alpha_4 Macroeconomic\ controls_{i,t-1} + \lambda_{jt} + \theta_{kt} + \gamma_{ijkt} + \mu_{ijkt} \quad (1)$$

In which:

Value = Firm value obtained by Tobin's Q; Crisis = dummy, being 1 after (2008-2012) and 0 before the crisis (2003-2007); CSR07 = ESG score for year 2007; Firm controls = cash holding, leverage, profitability and size; Macroeconomic controls = GDP growth, KKM index; i = firm; j = industry; k = country; t = year; λ_{jt} = industry-year effect; θ_{kt} = country-year effect; γ_{ijkt} = specific effects of the firm; μ_{ijkt} = residuals.

4. Results

Table 1 indicates that Brazil accounts for 35% of the sample, while Colombia scores only 3.8%. Brazilian and Mexican firms are the most valuable (TQ) and have the highest liquidity (CAS). Regarding CSR in 2007, Brazilian and Colombian firms stand out. Brazilian firms are the most debt-leveraged (LEV), while Peruvian firms are the most profitable (PRO).

Table 1*Descriptive Statistics*

Description	Obs	TQ	CSR07	CAS	LEV	PRO	SIZ	GDP	KKM
Argentina	420	1.003	3.988	0.075	0.235	0.123	5.219	4.714	-0.294
Brazil	1,480	1.240	17.875	0.106	0.291	0.116	6.175	3.965	0.030
Chile	880	1.083	4.398	0.063	0.245	0.108	5.618	4.529	1.195
Colombia	160	0.781	16.242	0.054	0.136	0.061	6.399	4.626	-0.476
Mexico	620	1.238	10.095	0.084	0.239	0.128	7.103	1.906	-0.088
Peru	620	1.103	7.406	0.073	0.193	0.160	5.097	6.179	-0.315
Obs	4,180	4,180	4,180	4,180	4,180	4,180	4,180	4,180	4,180
Mean	n.a	1.145	10.873	0.084	0.247	0.121	5.948	4.207	0.154
SD	n.a	0.802	21.972	0.094	0.187	0.106	1.911	3.341	0.563
Minimum	n.a	0.064	0.001	0	0	-0.301	1.244	-10.89	-0.654
Maximum	n.a	6.283	89.79	0.538	1	0.934	10.771	10.125	1.287

Note: Table 1 presents the average of variables for each sampled country (lines), as well as other descriptive measures for the whole sample (columns) for the total period from 2003 to 2012.

n.a – not applicable; SD - Standard deviation; Obs – number of observations

Mexico has the largest firms (SIZ). During this period, good performance by the Peruvian economy (GDP), as well as the best governance index (KKM) in Chile also stand out.

Table 2 shows the correlation among Equation 1 variables. The positive relation between 2007's CSR and firm value (TQ), as well as regarding size (SIZ), stands out. This suggests that larger firms are more likely to invest in social responsibility. The negative cash ratio (CAS) and profitability (PRO) with leverage (LEV) confirms the pecking order theory (Myers 1984). Contrary to expectations, a deterioration in performance by the economy (GDP) and the country's governance index (KKM) did not contribute to reduction of firm value in the (TQ) nor to a lower level of capital investment in 2007 (CSR07).

Table 3 reflects results of firm value averages (TQ) before and after the global financial crisis for each country and total sample (Panel A), as well as for sub-samples of firms with high and low level of investments in corporate social responsibility in 2007 (Panel B). Panel A indicates that firms in Brazil, Chile, Colombia, and Mexico - representing 75% of the sample - increased their value after the last global financial crisis, contrary to expectations. Argentina's results may be related to the insignificant variation

of firms' value before and after the financial crisis. Unlike other sample countries, Argentina has a long history of economic crises. It has resorted to International Monetary Fund credit lines and defaulted on its external debt many times, since its independence in 1816. This macroeconomic situation impacts companies' ability to create value.

However, Panel B indicates that for firms with a high level of CSR, this increase in value was even more significant than for those with a low level of CSR investments, reinforcing the H1 - During a financial crisis, firms with more social capital have their value less affected. The low level of statistical significance (10%) in the creation of value after the financial crisis - to firms with low CSR - indicates that, to them, the costs of overinvestment outweigh the benefit of mitigating conflicts between managers and other stakeholders.

Table 4 reflects the DID test results for Equation 1. Model 1 shows the variable CSR07 in its continuous form, while in Model 2 it is measured by means of a dummy, being equal to one if a firm's CSR value is greater and zero if equal to or below the country median. It turns out that after the global financial crisis, firms that did not invest in corporate social responsibility in 2007 lost value. However, those

Table 2
Correlation Test

Variables	TQ	CSR07	CAS	LEV	PRO	SIZ	GDP	KKM
TQ	1.000							
CSR07	0.159 [0.000]	1.000						
CAS	0.194 [0.000]	0.106 [0.000]	1.000					
LEV	0.042 [0.005]	0.097 [0.000]	-0.111 [0.000]	1.000				
PRO	0.295 [0.000]	0.170 [0.000]	0.185 [0.000]	-0.065 [0.000]	1.000			
SIZ	0.207 [0.000]	0.506 [0.000]	0.101 [0.000]	0.143 [0.000]	0.157 [0.000]	1.000		
GDP	-0.067 [0.000]	-0.027 [0.070]	0.001 [0.902]	-0.068 [0.000]	0.089 [0.000]	-0.083 [0.000]	1.000	
KKM	-0.015 [0.317]	-0.103 [0.000]	-0.073 [0.000]	0.046 [0.002]	-0.074 [0.000]	-0.038 [0.013]	0.017 [0.257]	1.000

Note: Table 2 shows the correlation between the variables, whose data are obtained between 2003 and 2012. The upper value is the correlation coefficient, while the lower value [in brackets] is the level of significance.

that did invest, did not have their value reduced, confirming H1 - During a financial crisis, firms with more social capital have their value less affected.

This result is in accordance with that of Fernández and González (2017), as well as that of Lins et al. (2017). To Lins et al. (2017), value creation is measured by gross and abnormal return of the companies' shares. The authors find that companies with high CSR ratings outperform companies with low CSR ratings - during the crisis - by at least four percentage points. This fact confirms the agency theory that points to a positive relationship between CSR and business value. CSR activities mitigate the conflict of interests between managers and other stakeholders, improving a firm's reputation and profitability.

However, it opposes the study by Buchanan et al. (2018). The authors states that before the crisis, there was a positive relationship between value and CSR. However, they also found that after the crisis, those companies that adopted CSR practices, lost more value than those that do not adopted such practices. The authors attribute this result to the fact that - dur-

ing the financial crisis - financial resources are even more valuable and there is an expectation of a drop in return on investments. In this scenario, agency conflicts stand out even more, making CSR overinvestment costs outweigh conflict resolution benefits.

In addition, there is a positive and significant relationship between cash (CAS) and profitability (PROF) with firm value (TQ), as expected. Regarding macroeconomic control variables, a negative relation between GDP and firm value (TQ) is observed. It is possible that economy's fluctuations will be captured by GDP in times of a lag greater than one year. Regarding the level of country governance (KKM), this was omitted from the model because of its collinearity with fixed effects and cluster by country as in Equation 1 - see Table 5.

Table 5 describes robustness tests related to Equation 1. In Model 1 the country-year fixed effect is excluded. In this case, it can be seen that firms that did not invest in CSR in 2007 declined in value during the crisis. Model 2 excludes the cluster by country. Here, it may be verified that firms that make such investments have not had their value reduced. Ex-

Table 3*Mean Difference Test*

Description	TQ (POST-PRE crisis)
Panel A	
Argentina	0.053
Brazil	0.056*
Chile	0.101***
Colombia	0.201***
Mexico	0.156***
Peru	-0.024
Total sample	0.074***
Panel B	
Firms with high CSR	0.135***
Firms with low CSR	0.037*

Note: Table 3 presents the paired-mean differences for firm's value (TQ) considering the previous (PRE-2003-2007) and subsequent (POST-2008-2012) periods to the global financial crisis. Panel A presents the result of the difference for each country, as well as for the total sample, while Panel B presents the result of the difference for the subsamples of high and low capital social responsibility (CSR) in 2007. Firms with high CSR are those above the median in the country in 2007, while those with low values are those with the same median below or equal to that of the country in 2007; Levels of significance of 1% (***), 5% (**) and 10% (*).

Table 4*Changes in Firm Value (Tobin's Q)*

Variables/Models	(1)	(2)
Crisis	-1.191***	-2.160***
Crisis*CSR07	0.001*	
Crisis*DCSR07		0.118
CAST-1	0.963***	0.958***
LEV t-1	-0.046	-0.042
PRO t-1	1.023***	1.029***
SIZ t-1	0.034	0.031
GDP t-1	-0.081***	-0.165***
KKM t-1	Omitted	Omitted
Industry-year effect	Yes	Yes
Country-year effect	Yes	Yes
Firm-specific effect	Yes	Yes
Cluster by country (SE)	Yes	Yes
R2	0.005	0.007
F	0.000	0.000
# Observations	4,180	4,180

Note: Levels of significance of 1% (***), 5% (**) and 10% (*); SE - standard error.

Table 5*Robustness Tests on Changes in Firm Value – 2002 a 2013*

Variables	Capital Expenditure (Capex)			
	Without country-year fixed effect (1)	Without SE clustered by country (2)	Crisis period 2008-2013 (3)	Crisis period 2009-2013 (4)
Crisis	-0.965***	0.910	-0.457***	2.064***
Crisis*CSR07	0.002	0.001**	0.001*	0.001
CASt-1	0.943***	0.963***	1.025***	0.872***
LEV t-1	-0.032	-0.046	0.043	-0.047
PRO t-1	1.061***	1.023***	1.027***	0.960***
SIZ t-1	0.027	0.034	0.040	-0.006
GDP t-1	0.001	-0.280	-0.006*	0.007**
KKM t-1	-0.641*	-8.927	Omitted	Omitted
Industry-year effect	Yes	Yes	Yes	Yes
Country-year effect	No	Yes	Yes	Yes
Firm-specific effect	Yes	Yes	Yes	Yes
Cluster by country (SE)	Yes	No	Yes	Yes
R2	0.011	0.001	0.012	0.020
F	0.000	0.000	0.000	0.000
# Obs	4,180	4,180	5,016	4,180

Note: Table 5 presents the results of the DID robustness tests considering the following: For Models 1 and 2, the previous and subsequent periods to the global financial crisis are (PRE-2003-2007) and (POST-2008-2012). For Model 3 is (PRE-2002-2007) and (POST-2008-2013), while for Model 4 is (PRE-2004-2008) and (POST-2009-2013);

Levels of significance of 1% (***), 5% (**) and 10% (*); SE - standard error.

cluding these effects indicates that such results are not due to shocks and changes in the institutional and regulatory environment of certain countries. In Models 1 and 2, the KKM index reflects a negative coefficient, contrary to expectations. It is possible that the improved level of governance of countries occurred in moments after market recovery. In Model 3, there is an extension of the sample from five to six years. In this case, the same results are confirmed in Table 4 - H1 - During a financial crisis, firms with more social capital have their value less affected. In Model 4, the beginning of the crisis in the year 2009 was postponed. Results indicate that in fact, the main effects of the crisis were restricted to 2008 for Latin American countries.

5. Conclusion

Confidence and social capital are topics of financial literature since the 1970s (Arrow 1972). However, their impact on firm value still gives rise to controversy. Measuring social capital at the corporate level occurs through implementing activities related to environmental, social and governance responsibility, whereby managers represent the interests of owners of capital, as well as those of other stakeholders. In a financial crisis, firms need to reduce expenses and prioritize investments that produce results in the short-term. In addition, in this scenario, there is a decline in credibility. However, these are occasions when trust in institutions becomes even more relevant.

This study aims to check whether during a finan-

cial crisis, firms with more social capital have their value less affected. A DID test was applied to a sample composed of 418 publicly traded firms in key Latin American countries - Argentina, Brazil, Chile, Colombia, Mexico, and Peru. As a result, the hypothesis is confirmed, ratifying agency theory. In fact, a higher level of investment in CSR limits the focus of managers to the short-term, reducing agency conflicts. Firms with larger volumes of CSR investments have a better reputation and are more committed with stakeholder interests. This, in turn, generates positive long-term efficiency and favorable results.

Furthermore, in accordance with results of studies by Fernández and González (2017) and Lins et al. (2017), detecting a positive relationship between CSR and firm value reinforces attempts to expand this investment by Latin American firms. Improve corporate governance by firms corroborates strengthening of markets and society as a whole. It is worth noting that corporate investment decisions are based on maximizing their value or obtaining financial returns, mostly. However, corporate investment decisions, based on maximizing their value by obtaining immediate financial returns is inadequate.

According to Putnam (1993), corporations with more social capital and, consequently, a higher level of confidence, are subject to greater economic development. For Bourdier (1986), Coleman (1988), Burt (1997) and Hawe and Shiell (2000), social capital can be converted into economic capital through long-term network connections. Economic benefits are obtained based on investments in energy and time, required to establish and maintain the necessary networks. In other words, economic benefits depend on the quality of previous relationships in order to become valuable assets.

In the case of capital markets, investments in social capital result in an increased value of a firm's shares. Decisions to invest in social capital are implemented by managers in the hope of obtaining a higher CSR rating. This may favor their reputation as professionals who respect employees, community, and environment.

From the shareholders' perspective, if a higher level of equity investment provides greater credibility at a time of financial crisis, investors should pay a premium for these firms when trust in the stock market is low. This study finds that this result occurred not only

in developed markets, but also in Latin America. We contribute to an on-going academic debate on CSR's relevance in creating value for firms, pointing to practical future implications for investors and capital market regulators.

Extending the period analyzed here may allow greater attention to actions by other stakeholders in encouraging overinvestment in CSR. While some firms may turn to other more lucrative growth opportunities, in the end such actions may be inadequate. Considering the relative gains of firms in promoting corporate social responsibility over a longer period is a promising topic for future research.

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Appendix

Table 1

Description of Variables

Initial	ES	Name	Formula	Reference	Source
Dependent variable - Value					
TQ	n/a	Tobin 's Q	$TQ = (\text{Book value of assets} - \text{Book value of equity} + \text{Market value of equity}) / \text{Book value of assets}$	Crisóstomo et al. 2011; Deng et al., 2013; Fernández & González, 2017	CIQ
Exogenous variable – Crisis					
Crisis	-	Global financial crisis	Crisis = 1 (2008 to 2012) and 0 (2003 to 2007)	Buchanan et al., 2018	n/a
Independent variables					
CSR07	+	Corporate social responsibility in 2007	CRS07 = ESG score (0-100) of year 2007	Bhandari & Javakhadze, 2017; Harjoto, 2017; Lins et al. 2017; Buchanan et al., 2018	Datastream
DCRS07	+	Dummy of Corporate social responsibility in 2007	DSCR07 = 1 (if value > median of country CSR in 2007) and 0 (if value ≤ median of country CSR in 2007)	Buchanan et al., 2018	Datastream
Firm control variables					
CAS	+	Cash	$CAS = (\text{Cash} + \text{Short-term investments}) / \text{Total asset}$	Lins et al. 2017; Buchanan et al., 2018	CIQ
LEV	-	Leverage	$LEV = \text{Total debt} / \text{Total asset}$	Lins et al. 2017; Buchanan et al., 2018; Hoi et al., 2018	CIQ
PRO	+	Profitability	$PRO = \text{Ebitda} / \text{Total asset}$	Lins et al. 2017; Buchanan et al., 2018; Hoi et al., 2018	CIQ
SIZ	-	Size	$SIZ = \text{Ln}(\text{Total asset})$	Hoi et al., 2018	CIQ
Macroeconomic controls variables					
GDP	+	Gross domestic product growth	GDP = Gross domestic product annual growth rate	Fernández & González, 2017	World Bank
KKM	+	Kaufmann Kraay and Mas-truzzi index	KKM = This varies between -2.5 and 2.5. The higher the regulatory environment index, the better	González, 2016	World Bank

Note: n/a = not applicable; ES = expected signal; CIQ = Capital IQ