CEO SOCIAL CAPITAL AND THE VALUE RELEVANCE OF ACCOUNTING METRICS: INTERNATIONAL EVIDENCE

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Abstract

Using a unique dataset of CEO social capital between 1998 and 2017, we investigate the degree to which CEO social capital increases or decreases investors' reliance upon traditional accounting metrics when valuing the equity of non-US firms. We find, ceteris paribus, that investors rely more heavily on the book value of equity, rather than on earnings per share, to value common stock when the firm is led by a CEO with greater social capital. These findings suggest that CEO social capital erodes investors' confidence in the quality and relevance of earnings; CEOs with higher social capital are entrenched and may engage in rent-seeking behaviors. These findings are robust to country-level development, efficiency, corruption comparisons, and alternative model specifications.

Keywords: CEO Social Capital, Value Relevance, Governance

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1. INTRODUCTION

A growing amount of literature investigates the effect of social connections between top executives, managers, and board members on firm and market outcomes. In each case, the authors argue that the direct or indirect connections between executives sometimes referred to as executives' social capital[1], is an important intangible asset of the firms and the executives' connections/social capital have an important indication of the firms' economic activities and financial policies (Bebchuk, Cremers, & Peyer, 2011; Engelberg, Gao, & Parsons, 2012; Fracassi & Tate, 2012; Larcker, So, & Wang, 2013; El-Khatib, Fogel, & Jandik, 2015; Fracassi, 2017; Ferris, Javakhadze, & Rajkovic, 2017a, 2017b; Egginton & McCumber, 2019; Luehlfing, McCumber, & Qiu, 2022). Executives' social capital can bring benefits to the firms by allowing the executives to have easier access to information and resources through the network, and in turn, helps the executives make better decisions for the firms that they manage. To some extent, social capital can also serve as a governance mechanic to monitor the executives' behaviors and help enable "trustworthy" activities, which in turn, help improve the reputation of those executives within the network. Such a "governance" role can be more important in an environment where external governance is weaker. Social capital, however, can bring detrimental effects to the firms by potentially mitigating the effects of other governance mechanics on the executives, and inducing the executives to seek more "rent extracting" activities. The negative effect could be more pronounced in an environment where external

[1] Woolcock (1998) first defines social capital as information, trust, and norms of reciprocity inherent in a social network, so social connections of executives can be also be defined as executives' social capital.

governance is weaker and the level of corruption is higher (Faccio, 2006).

In this paper, we investigate how chief executive officer (CEO) social capital, as one important type of executives' social capital, affects the value relevance of accounting metrics in the secondary markets/non-US markets[2] taking into consideration the governance quality and economic development status of a country. Specifically, we are interested in studying how CEO social capital increases or decreases investors' reliance upon traditional accounting metrics when valuing the equity of the firms, as well as whether country-level governance quality can influence the process. The value relevance of accounting metrics is important as it measures the usefulness of accounting information from the perspective of equity investors (Barth, Beaver, & Landsman, 2001). Reporting value-relevant accounting metrics also conforms to the ultimate objective of financial reporting: to provide relevant information on performance and to assist investors in equity valuation and making investment decisions. From the perspective of the firms, the increased value relevance of accounting metrics lowers the information risk for investors, who in turn, may request a lower equity risk premium for investment, and that leads to a potentially lower cost of equity for the firms (Francis, LaFond, Olsson, & Schipper, 2004).

To study the topic, we first follow the existing literature and create CEO network centrality measurements to proxy for CEO social capital between 1998 and 2017 (El-Khatib et al., 2015; Egginton & McCumber, 2019; Egginton et al., in press; Fogel, Jandik, & McCumber, 2018)[3]. Thereafter, we obtain relevant financial and price information from the Thomson Reuters Worldscope dataset, daily currency exchange information from International Monetary Fund (IMF hereafter) website[4], and other country-level attributes from the World Bank Open Data. Afterward, we exclude the firms in financial (SIC 6000-6999) and utility (SIC 4900-4999) industries, and firms with missing information for variables required in our empirical analysis.

We first examine the relation between CEO social capital and the value relevance of accounting metrics. Following Ohlson (1995), we regress future equity price on *Book value per share*, *Earnings per share*, *Social Capital*, and the interactions terms between these variables, along with some control variables that can potentially affect the value relevance of accounting metrics, and we emphasize on the impact of CEO social capital on the incremental explanatory power of *Book value per share* and *Earnings per share* on the future price, or the coefficients for the interaction terms between *Social Capital* and *Book value per share* and between *Social Capital* and *Earnings per share*[5]. We find that the coefficients for all the interaction terms between *Social Capital* and *Book value per share* are positive and significant ($p < 0.01$) while the ones for the interaction terms between *Social Capital* and *Earnings per share* are negative and significant ($p < 0.05$). The effects are also economically large. Setting *Degree* as an example, holding other variables constant at mean value, moving from the 25th to the 75th percentile of CEO social capital in our sample, one dollar increase in *Book value per share* and *Earnings per share* results in a 1.7% increase and 5% decrease in the market price of common equity in the sample, respectively.

To ensure that our results are not biased due to the use of the ordinary least square (OLS) model, we re-analyze our results using three different regression models: sensitivity analysis by excluding observations from Canada, weighted least square (WLS) model and two-stage least square model and we find that our results hold in each scenario[6]. In an un-tabulated analysis, we substitute the social capital measurements with mean social capital in a country in the OLS regression and still observe similar results. Overall, we arrive at our first conclusion that CEO social capital has a significantly positive impact on the value relevance of book value of equity but has a significantly negative impact on the value relevance of earnings for non-US firms.

Subsequently, we examine how governance quality and economic development status of a country influence the effect of CEO social capital on the value relevance of book value and earnings. To do so, we create dummy variables to proxy for high-quality governance groups and developed countries, including the dummy variables into our baseline model, and interact them with the variables of interest. We find that the positive effect of CEO social capital on the value relevance of book value of equity is significantly weakened in the high-quality governance group, but do not find any significant difference in the effect of CEO social capital on the value relevance of earnings between high- and low-quality governance group. As for the impact on the economic development status of a country, similarly, we find that the positive effect of CEO social capital on the value relevance of book value of equity is significantly weakened in developed countries. Interestingly, we also find that the CEO social capital has some strong positive effect on the value relevance of earnings in developing countries whereas the effect of CEO social capital turns strongly and significantly negative in developed countries. Otherwise stated, the strong negative relation between CEO social capital and the value relevance of earnings concentrates in firms in developed countries. It is worth noting that developed countries often have more sophisticated financial markets, higher governance quality, and higher institutional ownership which has been documented in the existing literature as an extra layer of corporate governance (Bushee & Noe, 2000; Chung & Zhang, 2011; Harford, Kecskes, &

[2] The existing literature provides evidence to suggest that non-US markets normally have a less sophisticated financial market and lower governance quality compared to the US market (Egginton, McBrayer, & McCumber, in press).

[3] We argue that our centrality measurements can capture the power and influence the CEOs to have within their network and can therefore represent the essential aspects of the social capital. As social capital and social network connections/centrality have a similar meaning, the definitions can be interchangeable in the study.

[4] The daily currency exchange rate is downloaded from the IMF website as follows: https://www.imf.org/external/np/fin/data/param_rms_mth.aspx.

[5] To address the potential look-ahead bias identified by Banz and Breen (1986). We use an equity price three months after the fiscal-year end to proxy for future equity price.

[6] The results hold even after excluding additional firms from Australia and France, China, or Argentina, Brazil, and Mexico.

Mansi, 2018). Thus, the overall results suggest that high governance quality can weaken the strong positive relation between CEO social capital and the value relevance of book value of equity, but not alter the strong negative relation between CEO social capital and the value relevance of earnings. To some extent, the existence of significant positive relation between CEO social capital and the value relevance of earnings in developing countries suggests that CEO social capital plays a more important "governance" role to monitor CEOs' behaviors and helping report more value relevant earnings for the firms in an environment where governance quality is lower.

We make several contributions to the literature. First, we extend the work of Luehlfing et al. (2022) by examining the effect of CEO social capital on the value relevance of accounting metrics in the secondary markets/non-US markets; however, our results are contradictory to theirs[7]. Our results indicate that CEO social capital erodes investors' confidence in the quality and relevance of earnings and that market views CEO social capital as a "net negative" intangible asset to non-US firms (e.g., encouraging CEOs to engage in rent-seeking behaviors). Thus, it remains questionable whether CEO social capital can bring a positive or negative impact on the value relevance of accounting metrics. Additionally, we confirm the findings from the existing literature that intangible asset plays an important role in the valuation process as a "non-financial" measure (Amir & Lev, 1996; Hughes, 2000; Francis, Hasan, Siraj, & Wu, 2019; Luehlfing et al., 2022), but our results suggest that the effect of the intangible asset on valuation may be altered by governance quality and economic development status of a country. Moreover, we document evidence to suggest that different investors may value intangible assets in different manners. Furthermore, we add to the evidence that suggests CEO social capital plays a more important "governance" role in environments with weaker governance mechanics (Ferris et al., 2017a). Specifically, the network can discipline CEOs' behaviors and help report high-quality accounting metrics that are more relevant to equity value. Our results also implement the work of Ferris et al. (2017a) by identifying the supply of more value-relevant accounting information to the market as a potential channel for CEO social capital to help reduce the cost of equity for the firms. Overall, our results reveal that practitioners should consider CEOs' social connections/social capital when evaluating firms' value, especially for the firms that operate in developing countries that are featured with lower governance quality and less-sophisticated financial markets.

The rest of the paper will be organized in the following format: Section 2 discusses the existing literature and develops hypotheses; Section 3 introduces the sample construction, and research design; Section 4 reports the main empirical results; Section 5 provides a further discussion on the empirical results; Section 6 concludes the paper.

[7] Luehlfing et al. (2022) find a strong negative relation between CEO social capital and a book value of equity and a strong positive relation between CEO social capital and earnings for US firms.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. CEO social capital and corporate outcomes

The traditional economic theories (e.g., Neoclassical economic theory; agency theory) assume the homogeneity of corporate executives whereas the behavior theories (e.g., upper echelons theory from Hambrick and Mason, 1984) argue that the executives are heterogeneity in nature so the characteristics of the executives may affect firms and market outcomes. As CEOs are the primary decision-makers of the firms, their characteristics may significantly influence corporate activities (Milbourn, 2003; Malmendier & Tate, 2008; Francis, Huang, Rajgopal, & Zang, 2008; El-Khatib et al., 2015).

Woolcock (1998) first defines social capital as information, trust, and norms of reciprocity inherent in a social network. The social network is important to firms as it helps create channels for effective informational flow and sharing (Nohria, 1992), and enables trust transactions within the network (Burt, 1997, 2005). As suggested by the behavior theories, CEO social capital is a valuable resource or, more formally, an important intangible asset for the firms, but is not measured or reported on the left-hand side of the balanced sheets under the traditional accounting standards (Amir & Lev, 1996; Hughes, 2000; Francis et al., 2019; Luehlfing et al., 2022)[8]. A growing literature documents evidence to suggest that CEO social capital can significantly influence firm and market outcomes, such as board monitoring (Fracassi & Tate, 2012), cost of equity (Ferris et al., 2017a), corporate risk-taking (Ferris et al., 2017b), capital investment (Fracassi, 2017), choices of earnings management (Griffin, Hong, Liu, & Ryou, 2021), executive compensation (Engelberg et al., 2012), merger and acquisition (El-Khatib et al., 2015), and stock liquidity (Egginton & McCumber, 2019; Egginton et al., in press).

2.2. CEO social capital and value relevance of accounting metrics

In this study, we examine how CEO social capital affects the extent to which market participants/investors rely on accounting metrics provided by the firms to price the equity of the firms. If the accounting metrics can precisely represent the performance of the firms and investors rely more heavily on the metrics to price the equity, the accounting metrics are more relevant to the equity price. Although the valuation process is invisible, we argue that the CEO's social capital can affect the valuation process through the following channels.

First, through the information and communication channel, CEOs have easier access to information and resources. The informational advantage can assist the management teams in better-utilizing resources and making operational decisions, for example, investing in projects with

[8] As CEO social capital is a non-physical resource that can potentially bring future benefits to the firms, it fits into the definition of an intangible asset, however, traditional accounting standards do not report CEO social capital as an asset in the balance sheets. That's why we claim CEO social capital as an unreported intangible asset.

higher net present value (NPV). The effective utilization of resources can help the firms raise production efficiency, form competitive advantages, and ultimately boost growth in both sales and profitability. All these are important steps for "value" creation for the firms from the perspective of equity investors.

The reputation and influence channel encourages good behaviors of CEOs through the potential "reward and punishment" mechanic. If CEOs perform well within the network, for example, by sending out "trustworthy" information to the market, the CEOs will be rewarded with the enhancement of reputation, otherwise, CEOs will be punished by loss of reputation. As a result, CEOs and the firms they manage are motivated to send out "trustworthy" information to the market. The "trustworthy" information sent to the market can effectively influence the perception of market participants, such as the analysts and investors, towards the firms and, ultimately, the market participants' valuation of the firms. One example of sending out "trustworthy" information to the market is to provide good quality accounting information that reflects the operating performance of the firms, and that in turn, leads to the outcomes of accounting metrics being more relevant to the value of the firms. Through the reputation channel, CEO social capital may have a stronger impact on firms in the areas with weaker external governance as the network may substitute for external governance in this scenario to encourage good behaviors of CEOs.

Along with the information and reputation channels, the CEOs accumulate power within the network. The power obtained by CEOs, in turn, helps shield CEOs from internal and external monitoring and enhances the CEOs' influence on other people in different manners. For example, the power helps CEOs effectively apply the information obtained through the network and make operational decisions without the over-mediation of the corporate board. CEOs can also influence other people by sending out certain information in the network that, as stated in the previous paragraph, will eventually alter the market participants' perception of the firms. In addition, the accumulated "power" helps CEOs obtain "bargaining power" within the network, for example, releasing their concerns from the perspective of the executive job market, and may encourage CEOs to engage in more rent-seeking behaviors that can hurt the firms in the long-run. That's why literature documents mixed results on the effect of CEO social capital on firm and market outcomes. For example, El-Khatib et al. (2015) report that "more connected" CEOs are more likely to initiate and complete some value-destroying merger and acquisition activities, and that the rent-seeking behaviors of the CEOs cannot be mitigated by the internal governance of the firms. Ferris et al. (2017a) find that firms with greater managerial social capital, provide by CEO network centrality, are associated with a significantly lower cost of equity social capital, and the effect is particularly strong in underdeveloped financial markets and those characterized by weak legal protection. Similarly, Ferris et al. (2017b) find evidence that firms with higher CEO social capital, provide by CEO network centrality, are more likely to engage in participating in corporate risk activities but those activities turn out to be value-enhancing to the firms. In summary, theory and empirical evidence predict a mixed impact of CEO social capital on other market participants' perception and valuation of the firms, and that's why the relation between CEO social capital and the value relevance of accounting metrics is an empirical question, in particular in the secondary markets, or non-US markets where are normally featured with the less sophisticated financial market, and lower governance quality.

With the above discussion, we posit that through the information and reputation channels, CEO social capital can help provide information to the market that may alter investors' view of the value relevance of accounting metrics. Thus, investors may assign different weights to the accounting metrics when evaluating firm values. As we are interested in the value relevance of both per-share book value and earnings, we try to test whether investors will assign different weights to per-share book value and earnings when evaluating value for firms led by CEOs with higher or lower social capital.

2.3. Hypotheses development

As CEO social capital is a useful "intangible" asset to the firms that cannot be measured and recorded directly by the traditional accounting methods, the asset of the firms with higher CEO social capital is underestimated. If the market is efficient, it is reasonable to assume that the investors may rely less on the book value of equity to value the firms[9]. If CEO social capital has a positive effect on the creation of value for firms in the long run and enables good CEO behavior to provide more "trustworthy" operating and earnings information to the market, it is rational to assume that the investors may rely more on the earnings figures to value the firms[10]. This leads to our first hypothesis, in an alternative format:

H1a: The value relevance of book value of equity and earnings is lower and higher, respectively, for the firms with higher CEO social capital.

From an opposite perspective, if CEO social capital represents a "net negative" intangible asset for firms, for example, encouraging rent-seeking behaviors of CEOs, it could result in negative consequences for the firms, such as worsening future operating situation and adding extra expense for the firms. With the deterioration of the financial health of the firms, investors could shift attention to the book value of equity (Barth, Beaver, & Landsman, 1998), but rely less on earnings to evaluate the firms[11]. The above discussion leads to another alternative for our first hypothesis:

[9] Following the existing value relevance literature, we assume that the market is efficient in the scenario.

[10] An alternative explanation is that investors have a positive outlook toward the firms, thus, investors are confident to rely on current earnings to predict future performance and assign additional value to the firms.

[11] With the deterioration of the financial health of the firms, investors have a negative outlook towards the firms, and are hesitant to rely on current earnings to predict future performance and assign additional value to the firms therefore, the value of the firms may deteriorate. Admittedly, although the book value of equity does not account for CEO social capital, the lower the

H1b: The value relevance of book value of equity and earnings is higher and lower, respectively, for the firms with higher CEO social capital.

The null hypothesis is simply no relation between CEO social capital and the value relevance of book value of equity and earnings.

Literature also documents that country-level attributes, governance quality, in particular, can affect firm and market outcomes, including the value relevance of accounting metrics (Alford, Jones, Leftwich, & Zmijewski, 1993; Ali & Hwang, 2000; Bushman & Smith, 2001; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997, 1998, 2002). For example, Alford et al. (1993) find that differences in capital markets, such as accounting standards, disclosure practices, and corporate governance, lead to significant differences in the value relevance of accounting disclosures. Ali and Hwang (2000) implement the work of Alford et al. (1993) and document evidence that country-level attributes, such as financial system, involvement of private-sector bodies in the standard-setting process, accounting practice, the impact of tax rules on financial accounting measurements, and spending on auditing services, can affect the value relevance of accounting information. Davis-Friday, Eng, and Liu (2006) investigate the role of the country-level governance mechanics and financial reporting quality in determining the extent of the effect of the crisis on the value relevance of earnings and book values for four Asian countries and report that certain country-level governance mechanics and financial reporting quality, such as accounting standards, audit report quality, rule of law, and ownership concentration, play an important role in determining the value relevance of accounting information. Overall, the empirical evidence suggests that country-level attributes, governance quality, in particular, affect firms' financial reporting practice and market participants' reaction to the accounting information, and ultimately affect the value relevance of accounting metrics. As stated in the previous paragraphs, CEO social capital could be a substitute for other external governance mechanics to monitor CEOs' behaviors, thus, the impact of CEO social capital on the value relevance of accounting metrics could be stronger in countries with lower governance quality. Otherwise, CEO social capital could encourage rent-seeking behaviors of CEOs, and the bad impact could be mitigated in the environment with stronger external governance mechanics, therefore, the impact of CEO social capital on the value relevance of accounting metrics could be weaker in countries with higher governance quality. With the preceding discussion, we form our second hypothesis, in an alternative format:

H2a: The effect of CEO social capital on the value relevance of book value of equity and earnings is stronger in countries with higher governance quality.

H2b: The effect of CEO social capital on the value relevance of book value of equity and earnings is weaker in countries with higher governance quality.

The null hypothesis is that there's no significant difference in the effect of CEO social capital on the value relevance of book value of equity and earnings between countries with higher and lower governance quality.

Developed countries are normally featured with more sophisticated financial markets and higher governance quality, in addition to high economic development status (La Porta et al., 1997, 1998, 2002). Additionally, the existing literature reports that institutional investors play a more important role in developed countries (Khorana, Servaes, & Tufano, 2005; Aggarwal, Erel, Ferreira, & Matos, 2011). Institutional investors have a higher capacity to analyze accounting information provided by the firms and make relevant investment decisions. Furthermore, evidence from the existing literature suggests that institutional investors can also play a "governance" role to monitor CEOs' and firms' actions (Bushee & Noe, 2000; Chung & Zhang, 2011; Harford et al., 2018). Overall, we view developed countries as an environment with an extra layer of governance. With the dual nature of CEO social capital[12], we assume that the effect of CEO social capital on the value relevance of book value and earnings could be stronger or weaker in developed countries. Here comes our third hypothesis, in the alternative format:

H3a: The effect of CEO social capital on the value relevance of book value of equity and earnings is stronger in developed countries.

H3b: The effect of CEO social capital on the value relevance of book value of equity and earnings is weaker in developed countries.

The null hypothesis is simply no significant difference in the effect of CEO social capital on the value relevance of book the value and earnings between developed countries and developing countries.

3. SAMPLE CONSTRUCTION, AND RESEARCH METHODOLOGY

3.1. Sample construction

Our sample period ranges from 1998 to 2017, and our raw data comes from various sources. To start with, we obtain from the BoardEx dataset the current board connection information for CEOs of non-US firms and use the information to calculate CEO network centrality measurements to proxy for CEO social capital. More specifically, we follow the existing literature (El-Khatib et al., 2015; Egginton & McCumber, 2019; Egginton et al., in press; Fogel et al., 2018) and construct the raw value of *Degree*, *Eigen*, *Between*, and *Close* centrality based on the number of direct ties with others in the network, the connections to the "connected" people in the network, how often an individual lie on the shortest distance between other two members, and the inverse of the sum of shortest distances between an individual and other individuals in the network. To make the centrality measurements more comparable, we rank the raw centrality value on an annual base in our entire dataset and generate

share price leads to closer relationships with the book value of equity under the residual income model framework.

[12] CEO social capital has both positive and detrimental effect on firm and market outcomes.

percentile centrality values based on their rankings. We also use principal component analysis of percentile centrality value to construct a fifth centrality measurement (*PCA*) as an aggregate centrality measurement that captures the common features of all four centrality measurements[13]. The CEO network centrality/social capital dataset contains 30,608 firm-year observations with available centrality/social capital information.

Thereafter, we obtain the firms' financial and price information from the Thomson Reuters Worldscope dataset and merge the information with the centrality/social capital dataset based on firm identification and year. As the Thomson Reuters Worldscope dataset displays price information of non-US firms in the local currencies of their home countries, we obtain daily currency exchange rate information from the IMF website, merge the information to the main dataset based on ISO country code (FIC), and time, and covert the firms' financial and price information into USD[14].

Additionally, we collect country-level attributes, governance quality variables, and macroeconomics factors in particular, from the World Bank Open Data. Specifically, the governance quality variables include *Government Efficiency* (*GE*), *Regulatory Quality* (*RQ*), *Rule of Law* (*RL*), and *Control of Corruption* (*CC*). The four governance quality variables are designed to measure 1) the capacity of the government to effectively formulate and implement sound policies; and 2) the respect of citizens and the state for the institutions that govern economic and social interactions among them. The detailed definition is provided below: *Government Efficiency* is designed to capture perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy, formulation and implementation, and the credibility of the government's commitment to such policies; *Regulatory Quality* aims to capture the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; *Rule of Law* is a measurement to capture perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; *Control of Corruption* is proposed to capture perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests (Kaufmann, Kraay, & Mastruzzi, 2011). The country-level macroeconomics factors include *gross domestic product* (*GDP*), *GDP Growth*, *Unemployment* rate, and *gross national income* (*GNI*) *per capita*. We also merge the information to our main dataset based on ISO country code and year.

In the final step, we follow the existing literature and exclude the firms in financial (SIC 6000-6999) and utility (SIC 4900-4999) industries, and firms with missing information for variables required for the empirical analysis. Our final dataset contains 16,074 firm-year observations from 61 countries and areas. Following the World Bank classification, we define countries with the mean value of GNI per capita of the country over $12,616 as developed countries and the rest as developing countries. As a result, 27 countries/areas are classified as developing countries and 34 countries/areas are classified as developed countries. All the continuous variables in our sample are winning at 1% and 99% levels to eliminate the impact of the extreme value of variables in the regressions.

Table 1 reports the summary statistics. Specifically, Table 1a presents summary statistics for both firm-level and country-level variables in the entire sample whereas Tables 1b and 1c present summary statistics of country-level variables in developing and developed countries, respectively. As can be seen from Table 1a, the mean (median) value of a sampled CEO is in the 48th (44th), 35th (32nd), 51st (51st), and 37th (32nd) percentile rank among all BoardEx-tracked executives and directors using *Degree*, *Eigen*, *Between*, and *Close* centrality. As can be seen from Tables 1b and 1c, compared to developing countries, developed countries contribute more observations (about 2/3) and have higher governance quality. Out of all the countries, the highest number of observations (1,824) in our sample comes from Canada, followed by Australia (1,756) and France (1,722), all three are developed countries[15]. It is also worth pointing out that further t-test (result un-tabulated) does not report any significant difference in the value of CEO social capital between developing and developed countries.

Table 2 reports the Pearson correlation matrix (with significance level) for key firm-level and country-level variables in Tables 2a and 2b, respectively. We can see from Table 2a that all social capital measurements are highly correlated and from Table 2b that the country-level governance variables are highly correlated to GNI per capita[16].

[13] The *PCA* variable has a value ranging from -3 to 3 and is viewed as an aggregate measurement of CEO social capital.

[14] We first match the future equity price with the currency exchange rate of the last trading day of the third month after fiscal year-end if it is available. If not, we use the average currency exchange rate of the nearby two trading days, weeks, or months. We use the implied currency exchange rate (from the Thomson Reuters Worldscope dataset) of fiscal year-end for the rest of the observations without currency exchange rate information from IMF. The results remain similar if we delete those observations without available currency exchange rate information from IMF.

[15] As developed countries contribute about 2/3 of the observations in our sample and the effect of CEO social capital on the value relevance of book value of equity and earnings are different in developing and developed countries, it is not surprising to see (in a later section) a reduction of significance level on the coefficients for the interaction terms between CEO social capital and the variables-of-interest when we use the WLS model.

[16] This is additional evidence to prove that developed countries normally have higher governance quality than developing countries.

Table 1a. Summary statistics for both firm-level and country-level variables in the entire sample

Variable	*N*	*Mean*	*SD*	*P25*	*P50*	*P75*
Price	16074	14.04	33.90	0.65	3.35	11.90
Book value per share	16074	8.74	21.23	0.36	1.94	7.27
Earnings per share	16074	0.58	2.59	0.00	0.09	0.66
Degree	16074	48.09	20.36	32.00	44.00	62.00
Eigen	16074	35.47	22.45	18.00	32.00	50.00
Between	16074	51.31	30.69	15.00	51.00	80.00
Close	16074	36.72	23.89	18.00	32.00	51.00
PCA	16074	-0.55	1.48	-1.69	-0.80	0.39
Size	16074	19.77	2.02	18.38	19.67	21.14
ROA sd	16074	0.15	0.55	0.02	0.05	0.10
Leverage	16074	0.21	0.19	0.05	0.19	0.33
Sales Growth	16074	0.26	1.04	-0.06	0.08	0.27
Op Loss	16074	0.27	0.44	0.00	0.00	1.00
Big4	16074	0.55	0.50	0.00	1.00	1.00
Duality	16074	0.29	0.45	0.00	0.00	1.00
Tenure	16074	1.42	0.89	0.69	1.39	2.08
GDP	16074	27.65	1.16	26.56	27.91	28.54
GDP Growth	16074	2.99	3.08	1.38	2.60	4.17
Unemployment	16074	7.04	4.58	4.50	5.71	7.98
GNI per capita	16074	36040.11	19404.46	24510.00	40240.00	47110.00
Government Efficiency (*GE*)	16074	1.35	0.69	1.13	1.61	1.79
Regulatory Quality (*RQ*)	16074	1.25	0.74	0.98	1.55	1.79
Rule of Law (*RL*)	16074	1.24	0.79	0.94	1.62	1.79
Control of Corruption (*CC*)	16074	1.30	0.91	0.81	1.74	1.98

Table 1b. Summary statistics for country-level variables in developing countries

Country name	*Nation code*	*N*	*GDP*	*GDP Growth*	*Unemploy-ment*	*GNI per capita*	*Government Efficiency*	*Regulatory Quality*	*Rule of Law*	*Control of Corruption*
Agentina	25	10	26.71	2.44	8.59	9310.00	-0.16	-0.71	-0.62	-0.40
Brazil	76	124	28.38	0.92	8.65	10407.10	-0.14	-0.04	-0.12	-0.21
Chile	152	14	26.09	3.33	7.95	11497.86	1.17	1.46	1.29	1.37
China	156	1083	29.63	8.76	4.54	5745.35	0.17	-0.24	-0.44	-0.42
Colombia	175	27	26.35	4.10	10.13	6142.22	-0.05	0.32	-0.37	-0.31
Egypt	220	20	25.97	3.91	11.26	2402.00	-0.56	-0.56	-0.34	-0.61
India	356	609	28.14	6.98	5.58	1348.79	-0.03	-0.37	-0.01	-0.40
Indonesia	366	65	27.40	5.48	4.96	3110.77	-0.18	-0.25	-0.51	-0.58
Jamaica	388	1	23.31	-1.46	12.37	4390.00	0.22	0.28	-0.45	-0.23
Kazakhstan	398	3	25.96	5.43	5.19	8753.33	-0.28	-0.15	-0.56	-0.91
Malaysia	458	229	26.21	5.09	3.26	8527.03	1.03	0.60	0.47	0.18
Mexico	484	106	27.68	2.33	4.19	9118.40	0.19	0.34	-0.49	-0.49
Mongolia	496	8	23.12	8.13	5.34	3416.25	-0.45	-0.23	-0.33	-0.54
Negeria	566	41	26.78	4.19	4.80	2444.15	-1.05	-0.79	-1.05	-1.12
Pakistan	586	7	26.13	3.91	2.11	1142.86	-0.74	-0.65	-0.84	-0.93
Panama	591	11	24.37	7.11	3.12	9555.46	0.18	0.40	-0.09	-0.34
Peru	597	12	25.84	5.28	3.33	5335.00	-0.24	0.44	-0.57	-0.36
Philippines	608	57	26.08	5.76	3.37	2602.81	0.02	-0.08	-0.42	-0.56
Poland	617	78	26.86	3.90	9.38	11869.87	0.57	0.91	0.62	0.54
Russia	643	114	28.05	1.97	6.13	10716.05	-0.31	-0.39	-0.81	-0.98
Vietnam	704	5	25.66	5.88	1.03	1414.00	-0.25	-0.63	-0.56	-0.58
South Africa	710	463	26.53	2.67	26.17	5820.26	0.45	0.44	0.12	0.16
Thailand	764	36	26.69	3.37	0.65	5435.83	0.30	0.22	-0.10	-0.38
Turkey	796	41	27.28	5.51	9.83	9874.39	0.24	0.28	0.02	-0.01
Ukraine	804	6	25.56	-1.59	8.72	2968.33	-0.57	-0.53	-0.78	-0.96
Tanzania	834	4	23.98	5.87	3.01	617.50	-0.49	-0.43	-0.42	-0.44
Zambia	894	2	24.00	4.10	10.49	1550.00	-0.56	-0.48	-0.28	-0.44
Average		117.6	26.25	4.20	6.82	5759.84	-0.06	-0.03	-0.28	-0.37

Table 1c. Summary statistics for country-level variables in developed countries

Country name	*Nation code*	*N*	*GDP*	*GDP Growth*	*Unemploy-ment*	*GNI per capita*	*Government Efficiency*	*Regulatory Quality*	*Rule of Law*	*Control of Corruption*
Australia	36	1756	27.74	2.80	5.43	49273.74	1.67	1.79	1.78	1.93
Austria	40	181	26.66	1.43	5.15	45441.88	1.69	1.51	1.86	1.69
Belgiuim	56	188	26.80	1.59	7.75	41436.91	1.64	1.29	1.39	1.46
Canada	124	1824	28.04	2.43	7.06	44155.98	1.80	1.70	1.79	1.95
Croatia	191	11	24.80	0.43	13.08	13406.36	0.60	0.47	0.23	0.10
Cyprus	196	24	23.86	0.46	12.52	27518.33	1.21	1.10	1.02	1.05
Czech Republic	203	14	26.07	1.95	5.52	18733.57	0.99	1.13	1.03	0.43
Denmark	208	93	26.41	1.52	6.10	55238.60	2.02	1.77	1.94	2.35
Finland	246	180	26.18	1.37	8.58	44670.94	2.09	1.79	2.00	2.28
France	250	1722	28.53	1.30	9.17	39111.96	1.50	1.17	1.43	1.38
Germany	280	1144	28.85	1.40	6.57	42534.41	1.59	1.61	1.69	1.81
Greece	300	147	26.24	-2.00	19.44	23127.14	0.37	0.52	0.45	-0.03
Hong Kong	344	1156	26.29	3.39	3.85	37714.71	1.80	2.01	1.65	1.73
Hungary	350	15	25.59	1.66	7.74	12410.00	0.65	0.95	0.71	0.36
Iceland	352	33	23.54	2.44	4.75	47285.15	1.63	1.24	1.74	2.03
Ireland	372	122	26.15	3.40	10.24	43744.26	1.49	1.70	1.68	1.63
Israel	376	419	26.13	4.10	8.12	29131.46	1.28	1.14	0.95	0.91
Italy	380	301	28.32	0.10	9.66	33854.78	0.49	0.83	0.45	0.24
Japan	392	381	29.26	0.82	4.19	41272.05	1.51	1.15	1.37	1.44
South Korea	410	147	27.88	3.41	3.49	25578.64	1.11	0.99	1.00	0.50
Lebanon	442	38	24.82	2.57	5.57	72587.37	1.69	1.72	1.82	2.05
Netherlands	528	403	27.38	1.35	5.29	47924.86	1.85	1.81	1.83	2.03
New Zealand	554	142	25.75	2.83	5.33	33450.00	1.81	1.88	1.91	2.30
Norway	578	332	26.65	1.57	3.60	80102.44	1.90	1.51	1.96	2.13
Portugal	620	69	26.09	0.48	10.72	20283.77	1.10	0.93	1.10	1.00
Qatar	634	12	25.52	10.28	0.36	64469.17	0.77	0.55	0.76	0.99
Saudi Arabia	682	40	27.18	3.39	5.62	21791.50	0.08	0.06	0.14	0.05
Singapore	702	797	26.15	5.43	4.32	44392.75	2.19	1.96	1.69	2.16
Slovenia	705	1	24.56	-2.64	8.84	23250.00	1.03	0.63	1.01	0.84
Spain	724	284	27.86	1.29	17.84	27821.76	1.16	1.08	1.10	1.01
Sweden	752	236	26.91	2.32	7.28	52983.22	1.86	1.74	1.93	2.19
Switzerland	756	308	27.11	1.84	4.43	77094.42	1.97	1.71	1.87	2.08
United Arab Emirates	784	44	26.52	3.22	2.26	39136.14	1.17	0.73	0.55	1.08
United Kingdom	826	334	28.64	1.64	6.20	43083.02	1.61	1.74	1.74	1.76
Average		379.4	26.60	2.05	7.24	40117.98	1.39	1.29	1.34	1.38

Table 2a. Correlation matrix: Pearson pairwise correlation between key firm-level variables

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1)	Price	1															
(2)	Book value per share	0.8051	1														
		0.00															
(3)	Earnings per share	0.5465	0.5188	1													
		0.00	0.00														
(4)	Degree	0.068	0.0359	0.0436	1												
		0.00	0.00	0.00													
(5)	Eigen	0.0221	-0.005	-0.0059	0.7098	1											
		0.01	0.53	0.46	0.00												
(6)	Between	0.0563	0.0374	0.0261	0.6928	0.5649	1										
		0.00	0.00	0.00	0.00	0.00											
(7)	Close	0.017	-0.0091	0.0013	0.7837	0.9113	0.635	1									
		0.03	0.25	0.87	0.00	0.00	0.00										
(8)	PCA	0.0456	0.0167	0.0178	0.8884	0.8928	0.8302	0.9357	1								
		0.00	0.03	0.02	0.00	0.00	0.00	0.00									
(9)	Size	0.1954	0.2053	0.209	0.5005	0.3197	0.3202	0.365	0.4185	1							
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
(10)	ROA sd	-0.0523	-0.0582	-0.0577	-0.0443	-0.0018	-0.0056	-0.0053	-0.0146	-0.1819	1						
		0.00	0.00	0.00	0.00	0.82	0.48	0.50	0.06	0.00							
(11)	Leverage	-0.003	0.0102	-0.0736	0.0989	0.0556	0.0896	0.0498	0.0825	0.2905	-0.0396	1					
		0.71	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00						
(12)	Sales Growth	-0.0075	-0.0306	-0.022	-0.033	-0.0134	-0.0074	-0.0122	-0.0176	-0.0922	0.1965	-0.0292	1				
		0.34	0.00	0.01	0.00	0.09	0.35	0.12	0.03	0.00	0.00	0.00					
(13)	Op Loss	-0.1042	-0.0775	-0.374	-0.0588	0.0272	0.012	0.0073	-0.0009	-0.3003	0.1591	0.0708	0.0414	1			
		0.00	0.00	0.00	0.00	0.00	0.13	0.36	0.91	0.00	0.00	0.00	0.00				
(14)	Big4	0.0301	0.0224	0.025	0.1566	0.096	0.1165	0.1019	0.1315	0.1919	-0.0647	0.0302	-0.0181	-0.042	1		
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00			
(15)	Duality	0.041	0.0819	0.034	-0.1544	-0.1224	-0.0643	-0.1345	-0.1308	-0.086	-0.0324	-0.0028	-0.0294	-0.0152	-0.0565	1	
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.05	0.00		
(16)	Tenure	0.0235	0.0261	0.0507	-0.1295	-0.0685	-0.0546	-0.0698	-0.0881	-0.0277	-0.1104	-0.003	-0.0826	-0.0929	-0.0215	0.2033	1
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.01	0.00	

Table 2b. Correlation matrix: Pearson pairwise correlation between key country-level variables

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	GDP	1							
(2)	GDP Growth	0.032	1						
		0.00							
(3)	Unemployment	-0.09	-0.24	1					
		0.00	0.00						
(4)	GNI per capita	-0.07	-0.41	-0.24	1				
		0.00	0.00	0.00					
(5)	Government Efficiency (GE)	-0.26	-0.31	-0.23	0.767	1			
		0.00	0.00	0.00	0.00				
(6)	Regulatory Quality (RQ)	-0.3	-0.36	-0.2	0.786	0.937	1		
		0.00	0.00	0.00	0.00	0.00			
(7)	Rule of Law (RL)	-0.21	-0.41	-0.18	0.829	0.949	0.944	1	
		0.00	0.00	0.00	0.00	0.00	0.00		
(8)	Control of Corruption (CC)	-0.23	-0.35	-0.2	0.81	0.96	0.943	0.972	1
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	

3.2. Research methodology

As we plan to examine the effect of CEO social capital on the value relevance of book value of equity and earnings, we follow the existing literature (Bao & Chow, 1999; Collins, Maydew, & Weiss, 1997; Francis & Schipper, 1999; King & Langli, 1998) and adopt Ohlson's (1995) model as our baseline model. Ohlson's (1995) model is listed below:

$$Price_{it} = \beta_0 + \beta_1 Book\ value\ per\ share_{it} + \beta_2\ Earnings\ per\ share_{it} + \varepsilon_{it} \quad (1)$$

where, *Price* is the equity price at three months after fiscal year-end; *Book value per share* is calculated by common equity scaled by numbers of shares outstanding at the fiscal year-end; *Earnings per share* is the bottom-line EPS number that is calculated by net income scaled by numbers of share outstanding at fiscal year-end. We primarily emphasize the incremental explanatory power of per-share book value and earnings on the equity price; thus, the coefficients of the per-share book value and earnings are of our primary interest (Collins et al., 1997; Brown & Sivakumar, 2003; Entwistle, Feltham, & Mbagwu, 2010).

To test the *H1* of whether CEO social capital has a positive or negative effect on the value relevance of accounting metrics, we adjust the baseline model by inserting CEO social capital measurements and their interactions with per share book value of equity and earnings into the regression. The new equation is shown as:

$$Price_{it} = \beta_0 + \beta_1 Book\ value\ per\ share_{it} + \beta_2\ Earnings\ per\ share_{it} + \beta_3 Social\ Capital_{it} + \beta_4\ Book\ value\ per\ share_{it} \times Social\ Capital_{it} + \beta_5\ Earnings\ per\ share_{it} \times Social\ Capital_{it} + Control_{it} + \varepsilon_{it} \quad (2)$$

Our variable-of-interests are the *Book value per share*, *Earnings per share*, *Social Capital*, and the terms of their interactions, in particular, the *Book value per share* × *Social Capital* (β_4) and *Earnings per share* × *Social Capital* (β_5). If CEO social has a negative (positive) effect on the value relevance of book value of equity (earnings), we would expect the β_4 (β_5) to be negative (positive), and vice versa. To control for other omitted variables that may partially determine the value relevance of accounting metrics, we follow the existing literature (Barth & Kallapur, 1996; Berger, Ofek, & Swary, 1996; Brown & Shivakumar, 2003; Burgstahler & Dichev, 1997; Collins et al., 1997; Collins, Pincus, & Xie, 1999; Davis-Friday et al., 2006; Francis & Schipper, 1999; Hodgson & Stevenson-Clarke, 2000) and include some firm-level characteristics as control variables. More specifically, we include *Size* (natural log of 1 plus book value of the asset), *ROA sd* (rolling standard deviation of return on asset), *Leverage* (total current and long-term debt scaled by total asset), *Op Loss* (whether the firm has operating loss in the year), *Sales Growth* (sales growth rate in the current year) and *Big4* (whether the firm uses big four auditing firms). Additionally, to separate the effect of CEO social capital on the value relevance of accounting metrics from the effect of other CEO characteristics, we control for some additional CEO characteristics such as *Duality* (whether CEOs also serves as board director), and *Tenure* (natural log of one plus number of years CEOs are in the position). Moreover, to control for the impact of economic conditions of a country on the value relevance of accounting metrics, we also include in the regression some macroeconomic factors, such as *GDP*, *GDP Growth*, and *Unemployment* rate. All regressions include time, country, and industry fixed effects. Errors are robust to firm heteroscedasticity whereas t-value is reported in parentheses.

To test *H2* of whether the governance quality in a country will strengthen or weaken the effect of CEO social capital on the value relevance of accounting metrics, we create four proxies for high-

quality governance dummy based on the medium value of governance quality in a year, including the dummy variables into regression (1), and interact them with per-share book value and CEO social capital measurements and with earnings and CEO social capital measurements. The equation is shown as:

$$Price_{it} = \beta_0 + \beta_1 Book\ value\ per\ share_{it} + \beta_2\ Earnings\ per\ share_{it} + \beta_3 Social\ Capital_{it} + \beta_4\ High - quality\ Governance\ Group_{it} + \beta_5\ Book\ value\ per\ share_{it} \times Social\ Capital_{it} + \beta_6\ Book\ value\ per\ share_{it} \times High - quality\ Governance\ Group_{it} + \beta_7\ Social\ Capital_{i,t} \times High - quality\ Governance\ Group_{it} + \beta_8\ Book\ value\ per\ share_{it} \times Social\ Capital_{it} \times High - quality\ Governance\ Group_{it} + \beta_9\ Earnings\ per\ share_{it} \times Social\ Capital_{it} + \beta_{10}\ Earnings\ per\ share_{it} \times High - quality\ Governance\ Group_{it} + \beta_{11}\ Earnings\ per\ share_{it} \times Social\ Capital_{it} \times High - quality\ Governance\ Group_{it} + Control_{it} + \varepsilon_{it} \quad (3)$$

Our variable-of-interests are the interaction terms between *Book value per share*, social capital measurements, and high-quality governance group (β_8) and between *Earnings per share*, social capital measurements, and high-quality governance group (β_{11}). The control variables in equation (3) are the same as the ones in equation (2).

To test our *H3* of whether there's any significant difference in the effect of CEO social capital on the value relevance of accounting metrics between developing and developed countries, we create a *Developed Countries* dummy, insert it into regression (1), as well as its interaction with per-share book value and CEO social capital measurements and with earnings and CEO social capital measurements. The equation is shown as:

$$Price_{it} = \beta_0 + \beta_1 Book\ value\ per\ share_{it} + \beta_2\ Earnings\ per\ share_{it} + \beta_3 Social\ Capital_{it} + \beta_4\ Developed\ Countries_{it} + \beta_5\ Book\ value\ per\ share_{it} \times Social\ Capital_{it} + \beta_6\ Book\ value\ per\ share_{it} \times Developed\ Countries_{it} + \beta_7\ Social\ Capital_{i,t} \times Developed\ Countries_{it} + \beta_8\ Book\ value\ per\ share_{it} \times Social\ Capital_{it} \times Developed\ Countries_{it} + \beta_9\ Earnings\ per\ share_{it} \times Social\ Capital_{it} + \beta_{10}\ Earnings\ per\ share_{it} \times Developed\ Countries_{it} + \beta_{11}\ Earnings\ per\ share_{it} \times Social\ Capital_{it} \times Developed\ Countries_{it} + Control_{it} + \varepsilon_{it} \quad (4)$$

Similar to equation (3), our variable of interests in equation (4) are the coefficients for *Book value per share* × *Social Capital* × *Developed Countries* (β_8) and *Earrings per share* × *Social Capital* × *Developed Countries* (β_{11}). The same control variables are applied in the equation (4).

4. EMPIRICAL RESULTS

4.1. CEO social capital and the value relevance of accounting metrics

4.1.1. OLS regression

Table 3 reports the results of the effect of CEO social capital on the value relevance of accounting metrics from OLS regressions. As can be seen from all columns of the table, the coefficients for *Book value per share* × *Social Capital* (β_4) are positive and highly significant ($p < 0.01$) while the ones for *Earnings per share* × *Social Capital* (β_5) are negative and highly significant ($p < 0.05$). The finding supports the alternative form of *H1b*. The margin analyses confirm that the effects are economically large. Setting *Degree* centrality as an example, holding covariates at the means, moving from the 25th to the 75th percentile of CEO social capital in our sample (e.g., moving from the 32nd percentile to the 62nd percentile in *Degree* centrality), one dollar increase in *Book value per share* and *Earnings per share* results in roughly 1.7% increase and 5% decrease in the market price of common equity (the 1.7% increase is calculated by (62 - 32) * 0.00785 / 14.04 whereas the 5% decrease is calculated by - (62 - 32) * 0.0237 / 14.04). As for control variables, an increase of *Size*, *Leverage*, *Sales Growth*, and *GDP Growth* is associated with a significant increase in the market price of equity whereas the increase in *ROA sd*, and *GDP* is associated with a significant decrease in the market price of common equity.

Table 3. CEO social capital and the value relevance of accounting metrics

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.695*** **	**0.859*** **	**0.846*** **	**0.889*** **	**1.126*** **
	(9.95)	**(15.16)**	**(14.21)**	**(16.15)**	**(35.13)**
Earnings per share	**3.273*** **	**3.088*** **	**3.547*** **	**3.010*** **	**1.959*** **
	(5.59)	**(6.59)**	**(7.04)**	**(6.44)**	**(7.51)**
Social Capital	**-0.0103**	**-0.0312*** **	**-0.0125** **	**-0.0187** **	**-0.301** **
	(-1.16)	**(-4.01)**	**(-2.45)**	**(-2.42)**	**(-2.55)**
Book value per share × Social Capital	**0.00785*** **	**0.00619*** **	**0.00421*** **	**0.00516*** **	**0.0977*** **
	(6.65)	**(5.17)**	**(4.84)**	**(4.73)**	**(5.82)**
Earnings per share × Social Capital	**-0.0237** **	**-0.0255** **	**-0.0253*** **	**-0.0231** **	**-0.435*** **
	(-2.39)	**(-2.55)**	**(-3.43)**	**(-2.47)**	**(-3.04)**
Size	0.465***	0.716***	0.755***	0.698***	0.647***
	(3.75)	(6.14)	(6.69)	(5.73)	(5.31)
ROA sd	-0.426**	-0.375**	-0.371**	-0.377**	-0.396**
	(-2.33)	(-2.19)	(-2.10)	(-2.15)	(-2.25)
Leverage	2.254**	2.008*	1.916*	2.054*	2.031*
	(2.15)	(1.90)	(1.83)	(1.95)	(1.93)
Sales Growth	0.723***	0.702***	0.687***	0.695***	0.699***
	(4.60)	(4.50)	(4.41)	(4.52)	(4.50)
Op Loss	0.720*	1.009***	1.049***	0.971**	0.937**
	(1.88)	(2.63)	(2.75)	(2.50)	(2.44)
Big4	0.243	0.386	0.387	0.383	0.374
	(0.80)	(1.25)	(1.26)	(1.25)	(1.22)
Duality	0.763*	0.782*	0.719*	0.767*	0.762*
	(1.86)	(1.89)	(1.77)	(1.86)	(1.85)
Tenure	0.232	0.135	0.135	0.146	0.155
	(1.37)	(0.81)	(0.81)	(0.87)	(0.93)
GDP	-5.352***	-5.525***	-5.696***	-5.603***	-5.510***
	(-6.86)	(-7.07)	(-7.27)	(-7.16)	(-7.05)
GDP Growth	0.336***	0.327***	0.327***	0.330***	0.327***
	(4.91)	(4.74)	(4.76)	(4.81)	(4.79)
Unemployment	-0.140	-0.159*	-0.169*	-0.154*	-0.157*
	(-1.55)	(-1.75)	(-1.87)	(-1.70)	(-1.73)
_cons	133.7***	133.8***	137.2***	135.7***	133.5***
	(6.57)	(6.57)	(6.71)	(6.62)	(6.53)
N	16074	16074	16074	16074	16074
adj. R-sq	0.723	0.720	0.720	0.719	0.721
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

*Note: This table presents the results of the OLS regressions of the effect of CEO social capital on the value relevance of book value and earnings. The dependent variable is Price, a continuous variable measured by the market price of the common equity at the end of three-month in year t + 1 after fiscal year-end; CEO social capital is measured by Degree in column 1, Eigen in column 2, Between in column 3, Close in column 4, and PCA in column 5; other variables-of-interest in the regression include Book value per share (book value of common equity scaled by number of shares outstanding), Earnings per share (net income scaled by number of shares outstanding), and their interactions with the CEO social capital measurements. The regression includes control variables of Size, ROA sd, Leverage, Sales Growth Op Loss, Big4, Duality, Tenure, GDP, GDP Growth, and Unemployment. Please check Appendix for a detailed description of control variables. The regression includes time, country, and industry fixed effect and the errors are robust to firm heteroscedasticity. T-value is reported in parentheses. Statistical significance of the coefficients is designated as ***, **, and * at 1%, 5%, and 10% levels, respectively.*

We document preliminary evidence in Table 3 that CEO social capital has a positive effect on the value relevance of book value of equity but has a negative effect on the value relevance of earnings for the non-US firms, and the preponderance of evidence documented rejects the null form of *H1* and supports the alternative form of *H1b*.

4.1.2. Robustness check

To ensure the robustness of our results, we use three different methods for our further analyses: sensitivity analysis by excluding observations from Canada, WLS model, and two-stage least square model, and report the results in Table 4. Specifically, in Table 4a, we conduct a sensitivity analysis by excluding firms from Canada that has the highest number of observations in our sample and find that the results hold. Further analysis (results un-tabulated) reveals that the results hold even after excluding additional from Australia and France, excluding additional observations from China, or excluding observations from Argentina, Brazil, and Mexico. We exclude the additional observations from Australia and France because Australia and France contribute the second and third highest number of observations in our sample. However, all three countries are developed countries. To ensure that our results are not driven by observations from

developing countries, we also try to exclude observations from China as China contributes the highest number of observations among other developing countries. We also try to exclude observations from Argentina, Brazil, and Mexico as Leuz, Nanda, and Wysocki (2003) document that these three countries have superior high inflation rates that may lead to higher volatility of the accounting numbers.

In Table 4b, we re-estimate the equation (2) using the WLS model. We find that the coefficients for *Book value per share* × *Social Capital* (β_4) remain positive and highly significant ($p < 0.01$) while the ones for *Earnings per share* × *Social Capital* (β_5) remain negative but the significance level of the coefficient is reduced. The result is not surprised to us as we find in the later part that the strong negative relation between CEO social capital and the value relevance of earnings concentrates in firms in developed countries. Given that developed countries contributes 2/3 of observations in our sample, when we use WLS model, we put more weight on the effect from observations of developing countries and that reduces the significance level of the coefficients.

Overall, we argue that the result still holds as we observe a negative but marginally significant ($p < 0.1$) coefficient for the interaction term between *Earnings per share* and the aggregate social capital measurement (*PCA*). In Table 4c, we use industry mean CEO social capital in a country as an instrument for CEO social capital to deal with the endogeneity concern, and still document similar results to the one in Table 3. In an un-tabulated analysis, we also re-estimate the equation (2) using a mean value of CEO social capital in a country and also observe similar results.

Table 4a. CEO social capital and the value relevance of accounting metrics: Robustness check (sensitivity analysis by excluding observations from Canada)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.646*** **	**0.844*** **	**0.826*** **	**0.861*** **	**1.105*** **
	(8.64)	**(14.10)**	**(13.57)**	**(14.67)**	**(29.69)**
Earnings per share	**3.479*** **	**3.129*** **	**3.458*** **	**3.117*** **	**2.042*** **
	(5.60)	**(6.24)**	**(6.75)**	**(6.23)**	**(6.82)**
Social Capital	**-0.00185**	**-0.0252*** **	**-0.0110** **	**-0.0170** **	**-0.230***
	(-0.19)	**(-2.97)**	**(-2.01)**	**(-2.02)**	**(-1.78)**
Book value per share × Social Capital	**0.00836*** **	**0.00595*** **	**0.00400*** **	**0.00525*** **	**0.100*** **
	(6.02)	**(4.06)**	**(4.26)**	**(3.83)**	**(4.95)**
Earnings per share × Social Capital	**-0.0259** **	**-0.0244** **	**-0.0210*** **	**-0.0234** **	**-0.430** **
	(-2.22)	**(-1.99)**	**(-2.63)**	**(-2.01)**	**(-2.49)**
Size	0.306**	0.634***	0.666***	0.621***	0.532***
	(2.28)	(5.08)	(5.46)	(4.69)	(4.01)
ROA sd	-0.338	-0.295	-0.280	-0.288	-0.315
	(-1.52)	(-1.43)	(-1.32)	(-1.36)	(-1.48)
Leverage	2.588**	2.216*	2.137*	2.271*	2.293*
	(2.18)	(1.86)	(1.81)	(1.91)	(1.93)
Sales Growth	0.619***	0.589***	0.584***	0.589***	0.591***
	(4.31)	(4.10)	(4.03)	(4.13)	(4.10)
Op Loss	0.864**	1.212***	1.276***	1.185***	1.101***
	(2.14)	(2.95)	(3.15)	(2.87)	(2.69)
Big4	0.608*	0.805**	0.816**	0.797**	0.772**
	(1.86)	(2.42)	(2.47)	(2.41)	(2.34)
Duality	0.262	0.297	0.217	0.277	0.251
	(0.60)	(0.67)	(0.50)	(0.63)	(0.57)
Tenure	0.346*	0.199	0.184	0.215	0.233
	(1.87)	(1.08)	(1.00)	(1.16)	(1.26)
GDP	-6.058***	-6.331***	-6.414***	-6.379***	-6.269***
	(-7.43)	(-7.74)	(-7.83)	(-7.79)	(-7.67)
GDP Growth	0.291***	0.282***	0.284***	0.284***	0.282***
	(4.19)	(4.03)	(4.06)	(4.07)	(4.06)
Unemployment	-0.191**	-0.211**	-0.214**	-0.205**	-0.208**
	(-2.09)	(-2.31)	(-2.34)	(-2.25)	(-2.27)
_cons	155.6***	157.0***	158.3***	158.2***	156.4***
	(7.34)	(7.37)	(7.42)	(7.40)	(7.33)
N	14250	14250	14250	14250	14250
adj. R-sq	0.730	0.726	0.726	0.725	0.728
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

Table 4b. CEO social capital and the value relevance of accounting metrics: Robustness check (weighted least square model)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.820*** **	**0.953*** **	**0.921*** **	**0.977*** **	**1.137*** **
	(9.44)	**(13.80)**	**(13.68)**	**(14.64)**	**(27.82)**
Earnings per share	**3.579*** **	**3.128*** **	**3.592*** **	**3.039*** **	**2.318*** **
	(4.95)	**(5.28)**	**(6.20)**	**(5.22)**	**(6.82)**
Social Capital	**0.0140**	**-0.0155**	**-0.00405**	**-0.00965**	**-0.0751**
	(1.22)	**(-1.62)**	**(-0.70)**	**(-1.02)**	**(-0.51)**
Book value per share × Social Capital	**0.00579*** **	**0.00407*** **	**0.00319*** **	**0.00336** **	**0.0715*** **
	(3.61)	**(2.65)**	**(3.02)**	**(2.34)**	**(3.19)**
Earnings per share × Social Capital	**-0.0230***	**-0.0176**	**-0.0198** **	**-0.0151**	**-0.343***
	(-1.73)	**(-1.28)**	**(-2.18)**	**(-1.17)**	**(-1.74)**
Size	-0.0356	0.244*	0.253*	0.242*	0.157
	(-0.23)	(1.82)	(1.89)	(1.72)	(1.10)
ROA sd	-0.333	-0.300	-0.305	-0.296	-0.321
	(-1.09)	(-1.05)	(-1.06)	(-1.02)	(-1.10)
Leverage	3.034*	2.697*	2.586*	2.716*	2.768*
	(1.93)	(1.71)	(1.65)	(1.73)	(1.76)
Sales Growth	0.565***	0.510***	0.521***	0.511***	0.521***
	(3.91)	(3.56)	(3.55)	(3.58)	(3.63)
Op Loss	0.960**	1.211***	1.234***	1.185**	1.117**
	(2.11)	(2.61)	(2.71)	(2.54)	(2.42)
Big4	1.042***	1.187***	1.148***	1.161***	1.162***
	(2.61)	(2.98)	(2.89)	(2.92)	(2.91)
Duality	0.452	0.515	0.433	0.492	0.463
	(0.87)	(0.99)	(0.85)	(0.95)	(0.90)
Tenure	0.447**	0.306	0.312	0.315	0.334
	(2.19)	(1.50)	(1.53)	(1.53)	(1.63)
GDP	-4.432***	-4.430***	-4.626***	-4.492***	-4.470***
	(-4.43)	(-4.50)	(-4.69)	(-4.56)	(-4.54)
GDP Growth	0.232***	0.228***	0.221***	0.231***	0.226***
	(2.86)	(2.81)	(2.72)	(2.86)	(2.80)
Unemployment	-0.0257	-0.0324	-0.0452	-0.0273	-0.0347
	(-0.33)	(-0.42)	(-0.58)	(-0.35)	(-0.44)
_cons	114.1***	109.6***	114.4***	111.0***	111.8***
	(4.38)	(4.25)	(4.45)	(4.29)	(4.33)
N	16074	16074	16074	16074	16074
adj. R-sq	0.758	0.757	0.758	0.756	0.758
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

Table 4c. CEO social capital and the value relevance of accounting metrics: Robustness check (two-stage least squares model)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.668*** **	**0.765*** **	**0.753*** **	**0.837*** **	**1.142*** **
	(7.22)	**(10.66)**	**(10.82)**	**(11.91)**	**(33.52)**
Earnings per share	**3.775*** **	**3.565*** **	**4.259*** **	**3.545*** **	**1.871*** **
	(5.15)	**(6.17)**	**(6.87)**	**(6.10)**	**(7.07)**
Social Capital	**-0.0358*** **	**-0.0672*** **	**-0.0190** **	**-0.0436*** **	**-0.706*** **
	(-2.66)	**(-5.71)**	**(-2.49)**	**(-3.77)**	**(-4.00)**
Book value per share × Social Capital	**0.00838*** **	**0.00887*** **	**0.00592*** **	**0.00656*** **	**0.132*** **
	(4.77)	**(5.13)**	**(5.12)**	**(3.99)**	**(5.75)**
Earnings per share × Social Capital	**-0.0336** **	**-0.0380*** **	**-0.0378*** **	**-0.0371*** **	**-0.684*** **
	(-2.53)	**(-2.82)**	**(-3.91)**	**(-2.84)**	**(-3.70)**
Size	0.655***	0.792***	0.753***	0.847***	0.757***
	(4.31)	(5.87)	(6.00)	(5.81)	(5.11)
ROA sd	-0.401**	-0.373**	-0.382**	-0.352**	-0.386**
	(-2.16)	(-2.17)	(-2.12)	(-1.97)	(-2.13)
Leverage	2.043*	1.867*	1.860*	1.834*	1.870*
	(1.95)	(1.77)	(1.78)	(1.75)	(1.78)
Sales Growth	0.718***	0.698***	0.682***	0.688***	0.695***
	(4.55)	(4.47)	(4.36)	(4.50)	(4.47)
Op Loss	0.854**	1.118***	1.098***	1.132***	1.069***
	(2.23)	(2.94)	(2.88)	(2.93)	(2.78)
Big4	0.306	0.456	0.421	0.452	0.446
	(1.00)	(1.48)	(1.36)	(1.47)	(1.45)
Duality	0.810**	0.807*	0.747*	0.780*	0.815**
	(1.98)	(1.95)	(1.83)	(1.90)	(1.99)
Tenure	0.172	0.110	0.138	0.127	0.133
	(1.02)	(0.65)	(0.84)	(0.75)	(0.79)
GDP	-5.402***	-5.298***	-5.656***	-5.437***	-5.403***
	(-6.90)	(-6.73)	(-7.18)	(-6.87)	(-6.87)
GDP Growth	0.333***	0.317***	0.318***	0.319***	0.316***
	(4.86)	(4.56)	(4.61)	(4.62)	(4.59)
Unemployment	-0.145	-0.158*	-0.179*	-0.154*	-0.160*
	(-1.60)	(-1.74)	(-1.95)	(-1.71)	(-1.76)
_cons	132.3***	128.0***	136.7***	129.4***	128.5***
	(6.49)	(6.25)	(6.67)	(6.24)	(6.24)
N	16074	16074	16074	16074	16074
adj. R-sq	0.722	0.719	0.719	0.718	0.720
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

*Note: This table presents the results of the effect of CEO social capital on the value relevance of book value and earnings using various regression models as a robustness check. There are three parts in the table: Table 4a presents the results using sensitivity analysis by excluding observations from Canada, Table 4b presents results using WLS model, and Table 4c presents the results using the two-stage least squares model. In all regressions, the dependent variable is Price, a continuous variable measured by the market price of the common equity at the end of three-month in year t + 1 after fiscal year-end; CEO social capital is measured by Degree in columns 1, Eigen in columns 2, Between in columns 3, Close in columns 4, and PCA in columns 5; other variables-of-interest in the regression include Book value per share (book value of common equity scaled by number of shares outstanding), Earnings per share (net income scaled by number of shares outstanding), and their interactions with the CEO social capital measurements. All regressions include control variables of Size, ROA sd, Leverage, Sales Growth Op Loss, Big4, Duality, Tenure, GDP, GDP Growth, and Unemployment. Please check Appendix for a detailed description of control variables. All regressions include time, country, and industry fixed effect and the errors are robust to firm heteroscedasticity. T-value is reported in parentheses. Statistical significance of the coefficients is designated as ***, **, and * at 1%, 5%, and 10% levels, respectively.*

4.2. Conditioning on country-level governance quality

Tables 5a, 5b, and 5c report the results related to the test of *H2*. As can be seen from the table, all the coefficients for *Book value per share* × *Social Capital* (β_5) are positive and highly significant ($p < 0.01$) while the coefficients for *Earnings per share* × *Social Capital* (β_9) are negative and highly significant ($p < 0.05$), and the result ensures that the strong positive and negative impact of CEO social capital on the value relevance of book value of equity and earnings remains in the low-quality governance group. Most of the coefficients for interaction terms between *Book value per share*,

social capital measurements, and high-quality governance group (β_8) are negative and significant, whereas all the coefficients for interaction terms between *Earnings per share*, social capital measurements, and high-quality governance group (β_{11}) are insignificant, except for the positive and marginal significance ($p < 0.1$) one in column 2 of Table 5c. The result indicates that the governance quality of a country weakens the strong positive impact of CEO social capital on the value relevance of book value of equity, which is in support of the alternative form of *H2b*, however, the governance quality does not significantly alter the strong negative impact of CEO social capital on value relevance of earning, which is in support of the null form of *H2*. Even though the coefficient for the β_{11} in column 2 of Table 5c is positive and marginally significant ($p < 0.1$), the one related to the aggregate measurements (*PCA*) in column 5 of Table 5c is still insignificant. That's why we conclude that the country-level governance quality does not alter the strong negative impact of CEO social capital on the value relevance of earnings. To ensure that our results are not biased due to the use of proxies for governance quality, in the un-tabulated analyses, we use various proxies for governance quality but still obtain similar results. The variables used to proxy for governance quality include the investor protection variable under competitive index file from the World Bank for the period of 2004 to 2017, and the variables of shareholder protection, anti-director rights, creditors' right, law enforcement, rule of law from La Porta et al. (1998).

Table 5a. CEO social capital and the value relevance of accounting metrics: conditioning on country-level governance: Conditioning on *Government Efficiency* (*GE*)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.424*** **	**0.630*** **	**0.645*** **	**0.689*** **	**1.019*** **
	(5.79)	**(10.62)**	**(10.71)**	**(11.27)**	**(22.98)**
Earnings per share	**3.659*** **	**3.517*** **	**3.852*** **	**3.306*** **	**1.808*** **
	(6.06)	**(7.40)**	**(7.70)**	**(6.50)**	**(4.87)**
Social Capital	**-0.00543**	**-0.0315*** **	**-0.0135** **	**-0.0164**	**-0.267***
	(-0.46)	**(-3.09)**	**(-1.98)**	**(-1.59)**	**(-1.69)**
High GE Group	**1.670***	**1.049**	**1.175**	**1.401***	**1.356** **
	(1.86)	**(1.36)**	**(1.63)**	**(1.81)**	**(2.21)**
Book value per share × Social Capital	**0.0107*** **	**0.00902*** **	**0.00541*** **	**0.00717*** **	**0.137*** **
	(6.70)	**(5.64)**	**(5.27)**	**(4.48)**	**(6.23)**
Book value per share × High GE Group	**0.575*** **	**0.509*** **	**0.435*** **	**0.443*** **	**0.275*** **
	(4.45)	**(4.97)**	**(4.01)**	**(4.41)**	**(4.41)**
Social Capital × High GE Group	**-0.00492**	**0.00710**	**0.00331**	**-0.0000374**	**0.0173**
	(-0.32)	**(0.51)**	**(0.35)**	**(-0.00)**	**(0.08)**
Book value per share × Social Capital × High GE Group	**-0.00534** **	**-0.00557** **	**-0.00206**	**-0.00370***	**-0.0711** **
	(-2.29)	**(-2.42)**	**(-1.24)**	**(-1.70)**	**(-2.19)**
Earnings per share × Social Capital	**-0.0331** **	**-0.0376*** **	**-0.0303*** **	**-0.0321** **	**-0.615*** **
	(-2.38)	**(-2.85)**	**(-3.42)**	**(-2.34)**	**(-3.19)**
Earnings per share × High GE Group	**-0.426**	**-0.415**	**-0.394**	**-0.199**	**0.574**
	(-0.39)	**(-0.48)**	**(-0.43)**	**(-0.23)**	**(1.16)**
Earnings per share × Social Capital × High GE Group	**0.0178**	**0.0202**	**0.0128**	**0.0155**	**0.328**
	(0.89)	**(1.03)**	**(0.91)**	**(0.81)**	**(1.15)**
Size	0.487***	0.764***	0.797***	0.743***	0.672***
	(3.91)	(6.64)	(7.06)	(6.10)	(5.53)
ROA sd	-0.297*	-0.256*	-0.234	-0.252	-0.270*
	(-1.85)	(-1.66)	(-1.49)	(-1.61)	(-1.72)
Leverage	1.984*	1.708	1.602	1.797*	1.748*
	(1.88)	(1.61)	(1.52)	(1.70)	(1.66)
Sales Growth	0.657***	0.637***	0.615***	0.632***	0.632***
	(4.49)	(4.39)	(4.26)	(4.39)	(4.38)
Op Loss	0.995***	1.317***	1.400***	1.273***	1.229***
	(2.69)	(3.57)	(3.82)	(3.40)	(3.33)
Big4	-0.00782	0.124	0.207	0.166	0.137
	(-0.03)	(0.41)	(0.69)	(0.55)	(0.45)
Duality	0.930**	0.948**	0.832**	0.930**	0.907**
	(2.28)	(2.31)	(2.06)	(2.27)	(2.23)
Tenure	0.228	0.137	0.106	0.135	0.150
	(1.39)	(0.84)	(0.65)	(0.83)	(0.92)
GDP	-3.992***	-4.356***	-4.390***	-4.401***	-4.251***
	(-5.40)	(-5.87)	(-5.90)	(-5.92)	(-5.73)
GDP Growth	0.300***	0.289***	0.291***	0.294***	0.291***
	(4.55)	(4.32)	(4.38)	(4.41)	(4.40)
Unemployment	0.0332	-0.00349	-0.00353	0.00977	0.00357
	(0.38)	(-0.04)	(-0.04)	(0.11)	(0.04)
_cons	96.87***	101.8***	101.7***	102.6***	99.58***
	(5.03)	(5.26)	(5.25)	(5.29)	(5.14)
N	16074	16074	16074	16074	16074
adj. R-sq	0.733	0.730	0.730	0.729	0.732
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

Table 5b. CEO social capital and the value relevance of accounting metrics: conditioning on country-level governance: Conditioning on *Regulatory Quality* (*RQ*)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.489*** **	**0.718*** **	**0.711*** **	**0.774*** **	**1.062*** **
	(5.86)	**(10.81)**	**(11.11)**	**(11.57)**	**(24.69)**
Earnings per share	**2.979*** **	**3.100*** **	**3.231*** **	**2.839*** **	**1.791*** **
	(4.49)	**(5.88)**	**(6.07)**	**(5.25)**	**(5.37)**
Social Capital	**-0.0249***	**-0.0385*** **	**-0.0220*** **	**-0.0222***	**-0.450** **
	(-1.85)	**(-3.41)**	**(-2.94)**	**(-1.93)**	**(-2.54)**
High RQ Group	**-2.272** **	**-1.556***	**-2.358*** **	**-1.263**	**-0.746**
	(-2.24)	**(-1.70)**	**(-2.79)**	**(-1.41)**	**(-1.01)**
Book value per share × Social Capital	**0.0104*** **	**0.00791*** **	**0.00508*** **	**0.00627*** **	**0.125*** **
	(6.35)	**(4.78)**	**(4.80)**	**(3.90)**	**(5.38)**
Book value per share × High RQ Group	**0.532*** **	**0.398*** **	**0.357*** **	**0.339*** **	**0.200*** **
	(3.66)	**(3.46)**	**(2.91)**	**(3.02)**	**(3.01)**
Social Capital × High RQ Group	**0.0283***	**0.0190**	**0.0226** **	**0.0113**	**0.358***
	(1.80)	**(1.36)**	**(2.42)**	**(0.81)**	**(1.70)**
Book value per share × Social Capital × High RQ Group	**-0.00603** **	**-0.00446***	**-0.00199**	**-0.00307**	**-0.0658***
	(-2.49)	**(-1.89)**	**(-1.13)**	**(-1.39)**	**(-1.94)**
Earnings per share × Social Capital	**-0.0219***	**-0.0288** **	**-0.0213** **	**-0.0227***	**-0.434** **
	(-1.66)	**(-2.25)**	**(-2.41)**	**(-1.76)**	**(-2.28)**
Earnings per share × High RQ Group	**0.944**	**0.302**	**0.967**	**0.724**	**0.599**
	(0.76)	**(0.30)**	**(0.92)**	**(0.72)**	**(1.15)**
Earnings per share × Social Capital × High RQ Group	**-0.00589**	**0.00533**	**-0.00848**	**-0.00328**	**-0.0365**
	(-0.28)	**(0.25)**	**(-0.55)**	**(-0.16)**	**(-0.12)**
Size	0.495***	0.758***	0.783***	0.744***	0.679***
	(3.93)	(6.47)	(6.87)	(5.98)	(5.49)
ROA sd	-0.300*	-0.242	-0.246	-0.246	-0.266
	(-1.77)	(-1.49)	(-1.49)	(-1.48)	(-1.60)
Leverage	1.735*	1.567	1.408	1.603	1.535
	(1.66)	(1.49)	(1.34)	(1.52)	(1.46)
Sales Growth	0.687***	0.660***	0.644***	0.658***	0.660***
	(4.70)	(4.52)	(4.45)	(4.54)	(4.56)
Op Loss	0.807**	1.158***	1.195***	1.094***	1.051***
	(2.13)	(3.05)	(3.17)	(2.83)	(2.76)
Big4	0.0167	0.196	0.249	0.210	0.187
	(0.06)	(0.64)	(0.82)	(0.69)	(0.62)
Duality	0.824**	0.842**	0.768*	0.837**	0.811**
	(2.02)	(2.05)	(1.90)	(2.04)	(1.99)
Tenure	0.255	0.162	0.135	0.158	0.178
	(1.55)	(1.00)	(0.84)	(0.97)	(1.10)
GDP	-5.563***	-5.815***	-5.909***	-5.889***	-5.776***
	(-7.19)	(-7.48)	(-7.59)	(-7.58)	(-7.45)
GDP Growth	0.315***	0.305***	0.302***	0.308***	0.305***
	(4.68)	(4.48)	(4.50)	(4.56)	(4.53)
Unemployment	-0.195**	-0.214**	-0.217**	-0.207**	-0.213**
	(-2.19)	(-2.41)	(-2.42)	(-2.32)	(-2.38)
_cons	140.8***	142.1***	144.1***	143.5***	141.1***
	(6.96)	(6.99)	(7.07)	(7.04)	(6.94)
N	16074	16074	16074	16074	16074
adj. R-sq	0.730	0.726	0.727	0.725	0.728
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

Table 5c. CEO social capital and the value relevance of accounting metrics: conditioning on country-level governance: Conditioning on *Rule of Law* (*RL*)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.325*** **	**0.538*** **	**0.568*** **	**0.582*** **	**1.009*** **
	(4.83)	**(10.33)**	**(9.58)**	**(10.31)**	**(22.11)**
Earnings per share	**3.928*** **	**4.239*** **	**4.235*** **	**4.073*** **	**2.163*** **
	(5.45)	**(7.81)**	**(6.94)**	**(6.99)**	**(5.40)**
Social Capital	**-0.0207***	**-0.0390*** **	**-0.0193*** **	**-0.0260** **	**-0.415*** **
	(-1.70)	**(-3.82)**	**(-2.84)**	**(-2.52)**	**(-2.59)**
High RL Group	**-6.939*** **	**-6.295*** **	**-6.488*** **	**-6.379*** **	**-5.364*** **
	(-7.74)	**(-8.34)**	**(-9.27)**	**(-8.17)**	**(-9.89)**
Book value per share × Social Capital	**0.0123*** **	**0.0109*** **	**0.00633*** **	**0.00968*** **	**0.164*** **
	(7.74)	**(7.17)**	**(5.91)**	**(6.20)**	**(7.48)**
Book value per share × High RL Group	**0.757*** **	**0.646*** **	**0.553*** **	**0.614*** **	**0.239*** **
	(6.23)	**(7.06)**	**(5.48)**	**(6.74)**	**(3.82)**
Social Capital × High RL Group	**0.0283***	**0.0225**	**0.0178***	**0.0223**	**0.370***
	(1.86)	**(1.62)**	**(1.92)**	**(1.63)**	**(1.78)**
Book value per share × Social Capital × High RL Group	**-0.00917*** **	**-0.00943*** **	**-0.00430*** **	**-0.00869*** **	**-0.132*** **
	(-4.00)	**(-4.25)**	**(-2.66)**	**(-4.07)**	**(-4.15)**
Earnings per share × Social Capital	**-0.0309** **	**-0.0467*** **	**-0.0297*** **	**-0.0439*** **	**-0.684*** **
	(-2.01)	**(-3.31)**	**(-2.85)**	**(-2.99)**	**(-3.19)**
Earnings per share × High RL Group	**-0.749**	**-1.798** **	**-0.942**	**-1.511***	**-0.275**
	(-0.71)	**(-2.25)**	**(-1.07)**	**(-1.84)**	**(-0.55)**
Earnings per share × Social Capital × High RL Group	**0.00756**	**0.0347***	**0.00701**	**0.0289**	**0.353**
	(0.38)	**(1.82)**	**(0.50)**	**(1.53)**	**(1.26)**
Size	0.489***	0.748***	0.787***	0.741***	0.673***
	(3.93)	(6.44)	(6.93)	(5.99)	(5.47)
ROA sd	-0.357**	-0.310*	-0.286*	-0.304*	-0.322**
	(-2.17)	(-1.93)	(-1.78)	(-1.86)	(-1.98)
Leverage	1.449	1.167	1.076	1.246	1.158
	(1.38)	(1.10)	(1.02)	(1.18)	(1.10)
Sales Growth	0.691***	0.662***	0.642***	0.660***	0.656***
	(4.70)	(4.57)	(4.45)	(4.60)	(4.57)
Op Loss	0.856**	1.173***	1.268***	1.094***	1.079***
	(2.30)	(3.14)	(3.42)	(2.90)	(2.89)
Big4	0.0492	0.176	0.295	0.208	0.188
	(0.16)	(0.59)	(0.98)	(0.70)	(0.63)
Duality	0.765*	0.738*	0.703*	0.726*	0.728*
	(1.88)	(1.79)	(1.73)	(1.77)	(1.78)
Tenure	0.287*	0.211	0.161	0.211	0.220
	(1.77)	(1.30)	(1.00)	(1.31)	(1.37)
GDP	-4.183***	-4.495***	-4.525***	-4.572***	-4.427***
	(-5.64)	(-5.98)	(-6.03)	(-6.08)	(-5.93)
GDP Growth	0.278***	0.263***	0.265***	0.267***	0.265***
	(4.20)	(3.92)	(3.97)	(4.00)	(3.99)
Unemployment	-0.120	-0.138	-0.146*	-0.124	-0.139
	(-1.42)	(-1.61)	(-1.71)	(-1.45)	(-1.63)
_cons	104.0***	107.3***	107.0***	108.8***	105.4***
	(5.39)	(5.48)	(5.48)	(5.54)	(5.40)
N	16074	16074	16074	16074	16074
adj. R-sq	0.733	0.731	0.729	0.729	0.732
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

Table 5d. CEO social capital and the value relevance of accounting metrics: conditioning on country-level governance: Conditioning on *Control of Corruption* (*CC*)

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.414*** **	**0.618*** **	**0.621*** **	**0.659*** **	**1.034*** **
	(5.81)	**(10.62)**	**(10.21)**	**(10.69)**	**(22.95)**
Earnings per share	**3.288*** **	**3.236*** **	**3.633*** **	**3.177*** **	**1.566*** **
	(5.58)	**(6.69)**	**(6.91)**	**(6.02)**	**(4.10)**
Social Capital	**-0.0121**	**-0.0307*** **	**-0.0166** **	**-0.0165**	**-0.292***
	(-1.02)	**(-3.00)**	**(-2.48)**	**(-1.62)**	**(-1.84)**
High CC Group	**-0.919**	**-0.698**	**-1.055**	**-0.449**	**-0.394**
	(-1.06)	**(-0.95)**	**(-1.50)**	**(-0.61)**	**(-0.66)**
Book value per share × Social Capital	**0.0112*** **	**0.00966*** **	**0.00598*** **	**0.00843*** **	**0.148*** **
	(7.07)	**(6.20)**	**(5.71)**	**(5.27)**	**(6.74)**
Book value per share × High CC Group	**0.621*** **	**0.548*** **	**0.483*** **	**0.514*** **	**0.241*** **
	(4.85)	**(5.48)**	**(4.57)**	**(5.23)**	**(3.86)**
Social Capital × High CC Group	**0.0101**	**0.00597**	**0.0121**	**0.00130**	**0.110**
	(0.66)	**(0.44)**	**(1.32)**	**(0.10)**	**(0.54)**
Book value per share × Social Capital × High CC Group	**-0.00667*** **	**-0.00725*** **	**-0.00320** **	**-0.00632*** **	**-0.0986*** **
	(-2.89)	**(-3.20)**	**(-1.96)**	**(-2.92)**	**(-3.06)**
Earnings per share × Social Capital	**-0.0303** **	**-0.0368*** **	**-0.0305*** **	**-0.0364*** **	**-0.614*** **
	(-2.22)	**(-2.79)**	**(-3.30)**	**(-2.58)**	**(-3.11)**
Earnings per share × High CC Group	**0.642**	**0.334**	**0.328**	**0.339**	**1.040** **
	(0.61)	**(0.40)**	**(0.37)**	**(0.40)**	**(2.11)**
Earnings per share × Social Capital × High CC Group	**0.00646**	**0.0142**	**0.00884**	**0.0160**	**0.226**
	(0.33)	**(0.73)**	**(0.64)**	**(0.84)**	**(0.81)**
Size	0.480***	0.744***	0.771***	0.731***	0.658***
	(3.87)	(6.47)	(6.84)	(5.98)	(5.41)
ROA sd	-0.264	-0.231	-0.210	-0.224	-0.240
	(-1.63)	(-1.49)	(-1.33)	(-1.42)	(-1.52)
Leverage	1.674	1.421	1.334	1.491	1.423
	(1.59)	(1.34)	(1.27)	(1.42)	(1.35)
Sales Growth	0.668***	0.643***	0.622***	0.633***	0.636***
	(4.49)	(4.42)	(4.27)	(4.49)	(4.44)
Op Loss	0.959***	1.230***	1.349***	1.174***	1.157***
	(2.61)	(3.36)	(3.70)	(3.17)	(3.16)
Big4	-0.0594	0.0552	0.164	0.0893	0.0716
	(-0.20)	(0.19)	(0.55)	(0.30)	(0.24)
Duality	0.868**	0.877**	0.763*	0.864**	0.846**
	(2.12)	(2.12)	(1.88)	(2.10)	(2.06)
Tenure	0.252	0.166	0.132	0.168	0.179
	(1.56)	(1.02)	(0.83)	(1.04)	(1.12)
GDP	-4.670***	-4.961***	-5.020***	-5.028***	-4.888***
	(-6.24)	(-6.60)	(-6.65)	(-6.67)	(-6.52)
GDP Growth	0.331***	0.317***	0.320***	0.321***	0.320***
	(4.99)	(4.73)	(4.81)	(4.80)	(4.81)
Unemployment	-0.0716	-0.0941	-0.101	-0.0849	-0.0937
	(-0.83)	(-1.10)	(-1.18)	(-0.99)	(-1.09)
_cons	116.2***	118.9***	119.9***	120.2***	117.5***
	(5.95)	(6.06)	(6.09)	(6.09)	(5.98)
N	16074	16074	16074	16074	16074
adj. R-sq	0.735	0.732	0.731	0.731	0.733
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

*Note: This table presents the results of the OLS regressions of the effect of CEO social capital on the value relevance of book value and earnings conditioning on country-level governance. There are four parts in the table: Tables 5a, 5b, 5c, and 5d present results conditioning country-level governance of Government Efficiency (GE), Regulatory Quality (RQ), Rule of Law (RL), and Control of Corruption (CC). In all regressions, the dependent variable is Price, a continuous variable measured by the market price of the common equity at the end of three-month in year t + 1 after fiscal year-end; CEO social capital is measured by Degree in columns 1, Eigen in columns 2, Between in columns 3, Close in columns 4, and PCA in columns 5; other variables-of-interest in the regression include Book value per share (book value of common equity scaled by number of shares outstanding), Earnings per share (net income scaled by number of shares outstanding), and the interactions of all the variables listed above with the CEO social capital measurements and country-level governance variables. All regressions include control variables of Size, ROA sd, Leverage, Sales Growth Op Loss, Big4, Duality, Tenure, GDP, GDP Growth, and Unemployment. Please check Appendix for a detailed description of control variables. All regressions include time, country, and industry fixed effect and the errors are robust to firm heteroscedasticity. T-value is reported in parentheses. Statistical significance of the coefficients is designated as ***, **, and * at 1%, 5%, and 10% levels, respectively.*

4.3. Developing vs. developed countries

Table 6 reports the results related to the test of *H3*. As can be seen from the table, all the coefficients for *Book value per share* × *Social Capital* (β_5) are unsurprisingly positive and highly significant ($p < 0.01$), but surprisingly, all the coefficients for *Earnings per share* × *Social Capital* (β_9) are positive, with three out of five social capital measurements are at least marginally significant ($p < 0.1$), including the aggregate social capital measurement (*PCA*). The result indicates that the impact of CEO social capital on the value relevance of earnings is positive for firms in developing countries. The result also suggests that the negative impact of CEO social capital on the value relevance of earnings concentrates in firms in developed countries, which

can also be proved by the negative and highly significant coefficients for *Earnings per share* × *Social Capital* × *Developed Countries* (β_{11}), which is in support of the alternative form of *H3a* (we view the result as an indication that the negative impact of CEO social capital on the value relevance of earnings is stronger in developed countries). It is also worth noting that all the coefficients for *Book value per share* × *Social Capital* × *Developed Countries* (β_8) are negative and three out of five are at least marginal significant ($p < 0.1$), similar to the situation of β_8 in Table 5, which is in support of the alternative form of *H3b*. In an un-tabulated analysis, we re-run our regression using propensity score matching with the closest neighbor method to match one firm in developing countries to another firm in developed countries with similar firm-level characteristics, and still find similar results.

Table 6. CEO social capital and the value relevance of accounting metrics: Developing v.s. developed countries

Variables	*(1) Degree*	*(2) Eigen*	*(3) Between*	*(4) Close*	*(5) PCA*
Book value per share	**0.414*** **	**0.618*** **	**0.621*** **	**0.659*** **	**1.034*** **
	(5.81)	**(10.62)**	**(10.21)**	**(10.69)**	**(22.95)**
Earnings per share	**3.288*** **	**3.236*** **	**3.633*** **	**3.177*** **	**1.566*** **
	(5.58)	**(6.69)**	**(6.91)**	**(6.02)**	**(4.10)**
Social Capital	**-0.0121**	**-0.0307*** **	**-0.0166** **	**-0.0165**	**-0.292***
	(-1.02)	**(-3.00)**	**(-2.48)**	**(-1.62)**	**(-1.84)**
Developed Countries	**-0.919**	**-0.698**	**-1.055**	**-0.449**	**-0.394**
	(-1.06)	**(-0.95)**	**(-1.50)**	**(-0.61)**	**(-0.66)**
Book value per share × Social Capital	**0.0112*** **	**0.00966*** **	**0.00598*** **	**0.00843*** **	**0.148*** **
	(7.07)	**(6.20)**	**(5.71)**	**(5.27)**	**(6.74)**
Book value per share × Developed Countries	**0.621*** **	**0.548*** **	**0.483*** **	**0.514*** **	**0.241*** **
	(4.85)	**(5.48)**	**(4.57)**	**(5.23)**	**(3.86)**
Social Capital × Developed Countries	**0.0101**	**0.00597**	**0.0121**	**0.00130**	**0.110**
	(0.66)	**(0.44)**	**(1.32)**	**(0.10)**	**(0.54)**
Book value per share × Social Capital × Developed Countries	**-0.00667*** **	**-0.00725*** **	**-0.00320** **	**-0.00632*** **	**-0.0986*** **
	(-2.89)	**(-3.20)**	**(-1.96)**	**(-2.92)**	**(-3.06)**
Earnings per share × Social Capital	**-0.0303** **	**-0.0368*** **	**-0.0305*** **	**-0.0364*** **	**-0.614*** **
	(-2.22)	**(-2.79)**	**(-3.30)**	**(-2.58)**	**(-3.11)**
Earnings per share × Developed Countries	**0.642**	**0.334**	**0.328**	**0.339**	**1.040** **
	(0.61)	**(0.40)**	**(0.37)**	**(0.40)**	**(2.11)**
Earnings per share × Social Capital × Developed Countries	**0.00646**	**0.0142**	**0.00884**	**0.0160**	**0.226**
	(0.33)	**(0.73)**	**(0.64)**	**(0.84)**	**(0.81)**
Size	0.480***	0.744***	0.771***	0.731***	0.658***
	(3.87)	(6.47)	(6.84)	(5.98)	(5.41)
ROA sd	-0.264	-0.231	-0.210	-0.224	-0.240
	(-1.63)	(-1.49)	(-1.33)	(-1.42)	(-1.52)
Leverage	1.674	1.421	1.334	1.491	1.423
	(1.59)	(1.34)	(1.27)	(1.42)	(1.35)
Sales Growth	0.668***	0.643***	0.622***	0.633***	0.636***
	(4.49)	(4.42)	(4.27)	(4.49)	(4.44)
Op Loss	0.959***	1.230***	1.349***	1.174***	1.157***
	(2.61)	(3.36)	(3.70)	(3.17)	(3.16)
Big4	-0.0594	0.0552	0.164	0.0893	0.0716
	(-0.20)	(0.19)	(0.55)	(0.30)	(0.24)
Duality	0.868**	0.877**	0.763*	0.864**	0.846**
	(2.12)	(2.12)	(1.88)	(2.10)	(2.06)
Tenure	0.252	0.166	0.132	0.168	0.179
	(1.56)	(1.02)	(0.83)	(1.04)	(1.12)
GDP	-4.670***	-4.961***	-5.020***	-5.028***	-4.888***
	(-6.24)	(-6.60)	(-6.65)	(-6.67)	(-6.52)
GDP Growth	0.331***	0.317***	0.320***	0.321***	0.320***
	(4.99)	(4.73)	(4.81)	(4.80)	(4.81)
Unemployment	-0.0716	-0.0941	-0.101	-0.0849	-0.0937
	(-0.83)	(-1.10)	(-1.18)	(-0.99)	(-1.09)
_cons	116.2***	118.9***	119.9***	120.2***	117.5***
	(5.95)	(6.06)	(6.09)	(6.09)	(5.98)
N	16074	16074	16074	16074	16074
adj. R-sq	0.735	0.732	0.731	0.731	0.733
Country fixed effect included	Yes	Yes	Yes	Yes	Yes
Industry fixed effect included	Yes	Yes	Yes	Yes	Yes
Year fixed effect included	Yes	Yes	Yes	Yes	Yes

*Note: This table presents the results of the OLS regressions of the effect of CEO social capital on the value relevance of book value and earnings in developing and developed countries. The dependent variable is Price, a continuous variable measured by the market price of the common equity at the end of three-month in year t + 1 after fiscal year-end; CEO social capital is measured by Degree in column 1, Eigen in column 2, Between in column 3, Close in column 4, and PCA in column 5; other variables-of-interest in the regression include Book value per share (book value of common equity scaled by number of shares outstanding), Earnings per share (net income scaled by number of shares outstanding), and the interactions of all the variables listed above with the CEO social capital measurements and dummy variable of developed countries. The regression includes control variables of Size, ROA sd, Leverage, Sales Growth Op Loss, Big4, Duality, Tenure, GDP, GDP Growth, and Unemployment. Please check Appendix for a detailed description of control variables. The regression includes time, country, and industry fixed effect and the errors are robust to firm heteroscedasticity. T-value is reported in parentheses. Statistical significance of the coefficients is designated as ***, **, and * at 1%, 5%, and 10% levels, respectively.*

5. DISCUSSION

The results from Tables 3 and 4 indicate that investors rely more heavily on the book value of equity, rather than earnings, to price the firms led by CEOs with higher social capital. Investors seem to view CEO social capital as a "net negative" intangible asset to non-US firms and do not have confidence in the quality and relevance of earnings reported by firms that are led by CEOs with greater social capital. The finding is contradictory to one from Luehlfing et al. (2022) for US firms. The contradictory results thus create a puzzle for the role of CEO social capital in the financial reporting and valuation process that needs to be further examined in future research.

Additionally, the results from Tables 5 and 6 reveal that the high governance quality of a country can weaken the positive impact of CEO social capital on the value relevance of book value of equity, but cannot reverse, or can even worsen the negative impact of CEO social capital on the value relevance of earnings, which is in support of the finding from El-Khatib et al. (2015) that high-quality internal or external governance cannot significantly alter the impact of CEO social capital on corporate outcomes.

From another point of view, the existence of the positive impact of CEO social capital on the value relevance of earnings in developing countries supports the theory that the CEO social capital is a substitute for external governance mechanics in developing countries where the country-level governance mechanics are weaker (Engelberg et al., 2012; Ferris et al., 2017a). Stated otherwise, in developing countries, the executive network somehow serves as the external governance mechanic to monitor CEOs' behaviors and to help provide more "trustworthy" earnings information to the market, whereas the investors, more precisely the retail investors, pay more attention to such an intangible asset in the valuation process.

6. CONCLUSION

In this study, we investigate the degree to which CEO social capital increases or decreases investors' reliance upon traditional accounting metrics when valuing the equity of non-US firms. We find that investors rely more heavily on the book value of equity, rather than on earnings figures, to value the common stock of the firm that is led by a CEO with greater social capital. These findings are robust to country-level development, efficiency, corruption comparisons, and alternative model specifications. These findings suggest that CEO social capital erodes investors' confidence in the quality and relevance of earnings; CEOs with higher social capital are entrenched and may engage in rent-seeking behaviors.

Our study has the following limitations: First, we adopt Ohlson's (1995) model as our baseline model and therefore undertake the theoretical framework and assumptions underpinning Ohlson's (1995) model, such as the residual income framework and the assumption of market efficiency. The interpretation of our results may be altered if the theories and assumptions are violated. For example, if the non-US markets are inefficient, the markets may not recognize the fair stated effect of CEO social capital on the value relevance of earnings, thus, the markets' view of CEO social capital as a "net-negative" asset may be biased. Second, due to data limitations, we obtain from the Thomson Reuters Worldscope dataset all the price information of non-US firms in their local currencies and have to use currency exchange information provided by the IMF website to convert all the price information from local currencies to US dollar. To some extent, the accuracy of currency exchange information provided by the IMF websites may have some potential influence on the accuracy of our results.

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APPENDIX

Table A.1. Variables descriptions

Variables	***Descriptions***
Price	Market price of the common equity at the end of the third month after fiscal year-end.
Degree	Number of direct ties with others in the network.
Eigen	Connection to "connected" people in the network.
Between	How often an individual lies on the shortest distance between the other two members.
Close	Inverse of the sum of shortest distances between an individual and other individual in the network.
PCA	Principal component of percentile value of four centrality measurements.
Book value per share	Common equity is scaled by the number of shares outstanding in year *t*.
Earnings per share	Net income scaled by a number of shares outstanding in year *t*.
Size	Firm size at year *t* (natural log of one plus book value of assets).
ROA sd	Rolling standard deviation of ROA for the past three years including the current year.
Leverage	One measurement of leverage (at year *t*), as total current and long-term debt scaled by total assets.
Sales Growth	Current year sales growth rate: calculated by the difference of sales amounts between the current and previous year scaled by the total sales amounts last year.
Op Loss	Indicator variable equals to 1 if the firm incurs an operational loss in year *t*, 0 otherwise.
Big4	Indicator variable equals to 1 if a firm uses Big4 auditors, 0 otherwise.
Duality	Indicator variable equals to 1 if the CEO also serves as the board director.
Tenure	Natural log of 1 plus years that the person serves as CEO in a firm.
GDP	Natural log of gross domestic production value of a country.
GDP Growth	GDP growth of a country.
Unemployment	Percentile value of unemployment rate in a country.
GNI per capita	Growth of national income per capita in a country.
Government Efficiency	Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
Regulatory Quality	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
Rule of Law	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
Control of Corruption	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.
Developed Countries	Indicator variable equals to 1 if a country's average gross national income (GNI) per capita is greater than $12,616 and 0 otherwise.

Note: The table summarizes the definitions of the variables employed in our study. All continuous variables are winsorized at 1% and 99% level.