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The Influence of Country-Level Social Capital on a Firm's Cash Conversion Cycle

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This paper examines the influence of country-level social capital on the cash conversion cycle worldwide. Consistent with the moral hazard theory, social safety networks and strong relationships among societal members make up the social capital of a region; I find a positive relationship between social capital and the cash conversion cycle. I studied data for 21 countries between 2007-2021. The results remain same after controlling for firm, year, and country fixed effects to address endogeneity problems, dropping large economies like China, and using the instrumental variable approach.

I. Introduction

The current literature portrays social capital as exuding benefits and mitigating some of the imperfections in corporate finance and investment decisions (Knack and Keefer 1997; Zak and Knack 2001; Jha and Cox 2015; Lins, Servaes, and Tamayo 2017; Panta 2020; Hasan and Habib 2020).

Previous studies have shed light on credit terms and their relationship with social capital (Gupta et al. 2018; Hasan and Habib 2019; Pasiouras and Samet 2022). However, more attention should be paid to the cost of this non-financial factor and its association with firm value destruction. In this research, I extend these strands of literature by investigating whether and how much the various national social capital influence firms' cash conversion cycle (CCC). The idea is that the level of societal norms, relationships, and networks in a particular country where the firm is headquartered is related to the number of days the firm will receive cash after transacting with traders.

This research shares some similarities with Pasiouras and Samet (2022) who investigated social capital from a global perspective. Specifically, Pasiouras and Samet (2022) examined how social capital reduces the cost of bank equity capital. However, this research investigates how social capital influences firms and their managers to be content and take a laissez-faire approach to collecting cash after transactions with trading partners, thereby increasing the number of days of the cash conversion cycle. Further, Pasiouras and Samet (2022) did not consider all firms but focused on financial institutions, which were excluded from this study. This study extends Pasiouras and Samet (2022) but includes all firms except financial institutions and utility firms.

According to the Legatum Prosperity Index (the measure of the Social Capital Index) 2021, South Sudan recorded the lowest score of 28.6, and Norway recorded the highest score of 84.20.

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Regarding geographical clusters, countries in Sub-Saharan Africa recorded the lowest score of 28.6, while Western Europe recorded the highest score of 84.04.

Investigating social capital and the CCC from a global perspective is crucial for firms' liquidity, given that informal institutions can be substitutes or complement formal institutions (Knack and Keefer 1997); social capital and trust may constrain firms from enforcing contracts. In this vein, firms and their managers take liberties not to enforce their trade credit terms. This contentment and the collective social safety network that social capital accords do not allow firms to collect cash quickly after a transaction with traders, leading to an increase in their cash conversion cycle days. The implication is that information asymmetry, free cash flow, and moral hazard theories are rife (Jensen and Meckling 1976; Jensen 1986).

This is the first study to examine the relationship between social capital and a firm's cash conversion cycle from a global perspective. The study hypothesizes that high social capital countries where firms are headquartered confer on the firms and their managers' strong social relations, networks, and social safety nets, making them content and take liberties and not collect cash after transactions, leading to an increase in the number of cash conversion cycle days.

In this empirical research, I used a sample of 43,334 firm-year observations from 21 countries worldwide for 2007-2021 to investigate the association between country-level social capital where a firm operates and its cash conversion cycle days. The Social Capital Index is obtained from the Legatum Institute and comprises five dimensions reflecting social relationships and personal association, civic and social participation, institutional trust and interpersonal trust, social networks, and personal and family relationships in a country. The cash conversion cycle days are constructed from firm characteristics such as days of sales outstanding, days of inventory on hand, and minus days of payable outstanding. I included firm-level and country-level variables to control for differences in firms and countries. Also, to address potential endogeneity issues, I applied firm, year, and country fixed effects. I also employ the instrumental variables specification method to robustly mitigate the remaining omitted variable concerns. Notwithstanding all these tests, I find that social capital has a positive relationship with the cash conversion cycle.

The roadmap of this paper is as follows. Section II provides previous and related studies, leading to hypothesis formulation. Section III describes the data and methodology. Section IV presents the empirical results. Section V concludes.

II. Related Literature and Hypothesis

Previous studies have documented the influence of social capital on corporate decisions. Social capital is defined as the norms of associations and networks of groupings that engender collective action (Woolcock 2001). Guiso et al. (2004) frame social capital as the level of mutual trust and altruistic tendencies in communities. Fukuyama (1996) also frames social capital as "the existence of a certain set of informal values or norms shared among members of a group that permits cooperation among them." Social capital is the tendency to honor one's obligations (Portes 1998). In a much broader sense, Guiso et al. (2008) define social capital as a "set of beliefs and values that foster cooperation." They argue that investment in stocks by investors is mainly based on the trust (faith) they have that the information they have in their possession is reliable and that there is fairness in the market overall. In some literature, social capital has been characterized as a set of networks of associations that bestows benefits and punishments (Coleman 1994). Also, the

network of associations fosters trust and cooperation (Putman 1993) and, by extension, decreases the need to document contracts (Knack and Keefer 1997).

Many are the mechanisms through which social capital affects corporate finance, which could be through trust, information flow, values of reciprocity, sanctions, reward, change of preference, etc. Social capital resulting from the social norms of jurisdiction benefits firms and their managers to conduct honest transactions (Jha and Chen 2015). Cheung (2016) argues that CSR (corporate social responsibility) firms are expected to have comparatively low cash holdings because they tend to have low idiosyncratic risk due to the high social capital with stakeholders. Using data on firms located in 54 countries, Dudley and Zhang (2016) find that agency-based theory is plausible in explaining that low country-level trust causes shareholders to pressure the firm to disgorge cash. However, they failed to find evidence of a positive relationship between low trust and precautionary savings. Using US data, Habib and Hasan (2017) show that firms in high social capital counties hold less cash than firms in low-social capital counties. They argue that this confirms the negative relationship between social capital and cash holding via financial constraint and financial reporting quality channels as well as the positive relationship between social capital and cash holding through idiosyncratic and systematic risk channels. Lins, Servaes, and Tamayo (2017) find that firms with high social capital, as measured by CSR intensity during the 2008-2009 financial crisis, recorded stock returns that were 4-7 percentage points higher than firms with low social capital.

Huang and Shang (2019) find that altruistic tendencies and mutual trust among firms (social capital) have a negative relationship with both firm's leverage and short-term ratios. Hoi, Wu, and Zhang (2019) find a negative relationship between social capital (secular norms and networks surrounding corporate headquarters) and CEO compensation. Another related study by Meng and Yin (2019), using data spanning over 20 years for 22 countries, examined the relationship between the level of trust in the country and the cost of debt. They find that the impact of trust on the cost of debt was pronounced for countries with poor governance structures during the financial crisis. Also, firms and managers in high social capital regions take high risks (Panta 2020), and the author argues that the sociological environment gives individuals and firms important capital value that encourages them to take excessive risks. The following strand of literature investigates credit cost and social capital (Gupta et al. 2018; Hasan and Habib 2019), but Pasiouras and Samet (2022) examine country-level social capital and credit cost to financial institutions from the global perspective.

The argument in this paper is that the country-level social capital made up of social relations and safety networks in the area where the firm is headquartered influences the firm and its managers; it breeds contentment and allows managers to take liberties with their credit transactions, thereby increasing the number of cash conversion cycle (CCC) days. Based on the above, I formulate the following hypothesis:

H1: All else equal, the social capital of a country where the firm is headquartered has a positive relationship with the cash conversion cycle (CCC).

III. Data and Methodology

Data Description

To investigate the influence of social capital on the cash conversion cycle, I collected datasets from several sources. I extracted data from Compustat North America and Global for firms and countries for 2007-2021. I dropped financial institutions and utility companies from the sample because they are heavily regulated, and their SIC codes are between 4900-4999 and 6000-6999, respectively. Then, I combined these datasets with (i) World Governance Indicators from the World Bank, (ii) World Development Indicators also from the World Bank, and (iii) the Social Capital Index (or prospective index) obtained from the Legatum Institute for 2007 to 2021.

Following existing literature on social capital and firm-level variables, I match firm-level information and country-level data, that is, the country where the firm is located. It is important to note that the social capital of a region (in this case, the country) where the firm is headquartered will influence its managerial decisions and governance culture. That is, it serves as an impetus for management to self-serve their interest through a laissez-fair style.

After the data combinations and other firm-level variables, I obtained 9,221 unique firms operating in 21 countries during the sample period. The maximum number of firm-year observations is 43,779, primarily due to the unbalanced nature of the panel data and missing values of the variables.

Construction of the Main Variables

Cash Conversion Cycle (CCC): Following previous studies such as Zeidan and Shapir (2017), I compute:

$$CCC = 365 * (Average\ Inventory/COGS + Average\ Receivables/Sales - Average\ Payables/COGS).$$

This CCC is made up of days of sales outstanding (DSO), days of inventory on hand (DOH), and minus days of payables outstanding (DPD). The CCC is the main dependent variable. It is the expression of the amount of time (days) it takes to receive cash after a transaction.

Social Capital Index (SCP): This variable is from the Legatum Institute (2019) and has five dimensions: i) civic and social participation (CIVIC), ii) institutional trust (INSTRUCT), iii) interpersonal trust (INTTRUST), iv) personal and family relationships (PERSFAM), and v) social networks (SOCNETW). Each dimension accounts for about 20% of the index. It generally reflects extant literature on social capital indexes which serves to elicit social capital differences that pertain to various places, for example, in the USA; Coleman (1988), Putnam (2000), Rupasingha et al. (2006), and Hawes et al. (2012) are the notable social capital works. In Europe, researchers study social capital by using survey-based datasets from ESS (European Social Survey), EVS (European Values Survey), and WVS (World Values Survey) (Adam 2006; Gannon and Roberts 2020). Other international works, for example, Knack and Keefer (1997) and Ram (2010), use trust as a key element in social capital.

Control Variables: I controlled the firm-level and country-level variables to account for the differences in social capital and CCC regressions.

Social capital is a societal construct that influences firms' human capital and corporate culture (Panta 2020; Jha 2019; Hoi, Wu, and Zhang 2019). Accordingly, I control for firm-level variables such as natural log of total assets (Size), return on assets (ROA), leverage (LEV), asset tangibility (TAN), cash holding (CASHH), and book-to-market ratio (BM). Social capital matters in economic development, labor market and infrastructural qualities, governance, and political systems (Kanagaretnam et al. 2019; Griffin et al. 2017; Belkhir et al. 2021). Based on these, I control for the following country-level variables: population growth (POPNG); inflation (INFL); the natural log of gross domestic product (LGDP); the rule of law (ROLW); population stability and absence of violence (PSTBL); and regulatory quality (RLQT).

Summary Statistics

Table 1. Descriptive statistics.

	N	Mean	SD	Min	p25	Median	Max
CCC	43334	40.639	247.835	-1297.586	9.875	54.808	1052.607
SCP	43334	77.385	0.435	66.696	77.011	77.392	81.282
SIZE	43334	5.737	2.630	-1.133	4.003	5.978	11.067
ROA	43313	-.091	0.584	-3.019	-.046	.087	.402
LEV	43334	.314	0.424	0	.031	.214	2.36
TAN	43334	.497	0.453	0	.153	.349	2.044
CashH	43334	.222	0.240	0	.042	.13	.99
BM	43334	.027	0.118	-.606	.001	.007	.677
POPNG	43334	.731	0.181	-.155	.693	.733	.961
LINFL	43334	21.252	0.835	18.591	21.105	21.318	22.344
LGDP	43334	22.096	0.820	19.886	22.304	22.396	22.659
ROLW	43334	1.569	0.081	.577	1.549	1.607	1.807
RLQT	43334	1.414	0.131	.599	1.276	1.444	1.775

Table (1) presents the summary statistics where the average number of CCC in the sample is about 41 days, approximately a month and ten days, with a standard deviation of 248. It means, on average, it takes firms about 41 days to receive cash after entering into a transaction. The minimum CCC reported is (1298), and the maximum is 10524.

The Social Capital Index (SCP) averages 77% with a standard deviation of 0.4435. The minimum SCP figure is 67, and the maximum is 81.

The correlation matrix (not presented) shows a positive and statistically significant relationship between the social capital of a region (country) and cash conversion cycle days. This supports the main hypothesis that the social capital of a particular jurisdiction contributes to influencing the decisions that firms make on the number of days it may take to receive cash after entering into a transaction with another customer. That is, the country's social capital (SCP) increases the cash conversion cycle (CCC) of firms in the country.

Model Specification

Following Pasiouras and Samet (2022), I build a linear equation model for this study where I regress the firm-level cash conversion cycle (CCC) on country-level social capital (SCP), firm-level and country-level variables (Controls), and fixed effects:

$$CCC_{i,t} = \beta_0 + \beta_1 SCP_{c,t} + \beta_2 CONTROLS + FE + \varepsilon_{i,t}$$

where $\varepsilon_{i,t}$ represents an error term, and FE represents a set of country, year, firm, and industry fixed effects. The subscripts i , c , and t represent individual firms, countries, and time, respectively. I report pooled ordinary least squares (OLS) regression results with robust standard errors.

Table 2. Empirical results.

Baseline, fixed effect, and instrument variable regression.

VARIABLES	(1)	(2)	(3)	(4)
	OLS CCC	FE CCC	IV CCC	No China CCC
SCP	17.01** (3.201)	37.16*** (3.345)	21.04* (1.813)	17.01** (3.201)
SIZE	5.766*** (21.36)	22.98*** (5.877)	5.761*** (4.543)	5.766*** (21.36)
ROA	98.68*** (94.83)	12.63* (1.807)	98.68*** (13.06)	98.68*** (94.83)
LEV	-72.97*** (-80.69)	-48.10*** (-8.695)	-73.03*** (-8.204)	-72.97*** (-80.69)
TAN	-59.79*** (-55.73)	-24.96* (-1.985)	-59.75*** (-11.05)	-59.79*** (-55.73)
CashH	-10.31** (-5.718)	-72.48*** (-4.768)	-10.34 (-0.849)	-10.31** (-5.718)
BM	122.7*** (64.89)	31.46** (2.570)	122.6*** (7.138)	122.7*** (64.89)
POPNG	2.711 (0.603)	-26.27 (-1.031)	1.260 (0.149)	2.711 (0.603)
LINFL	-3.674** (-4.572)	1.471 (0.121)	-3.036 (-1.303)	-3.674** (-4.572)
LGDP	-1.069 (-1.298)	-4.292 (-0.626)	-1.916 (-0.793)	-1.069 (-1.298)
ROLW	-9.895 (-0.636)	-321.7*** (-3.108)	-7.843 (-0.343)	-9.895 (-0.636)
RLQT	-21.54 (-1.829)	134.3* (1.999)	-32.92 (-1.043)	-21.54 (-1.829)
PSTBL	-22.38* (-2.717)	-41.30 (-0.968)	-20.77** (-2.126)	-22.38* (-2.717)
Constant	-1,092* (-2.736)	-2,506*** (-3.017)	-1,385 (-1.611)	-1,092* (-2.736)
FE:				
Industry	No	Yes	No	No
Firm	No	Yes	No	No
Country	No	Yes	No	No
Cluster:				
Firm	Yes	No	Yes	Yes
Year	Yes	No	Yes	Yes
Country	Yes	Yes	Yes	Yes
Observations	43,313	42,499	43,313	43,313
R-squared	0.149	0.648	0.149	0.149

Note: The parentheses contain the t-statistics; ***, **, and * are 1%, 5%, and 1% significance, respectively.

IV. Main Results and Discussion

The relationship between country-level social capital and firm-level CCC is positive and statistically significant at a 1% significance level. According to the correlation matrix (un-tabulated), the correlation estimate is 0.031. This supports the main hypothesis of this study that country-level social capital (SCP) increases the cash conversion cycle (CCC) of firms headquartered in such jurisdiction.

In Table 2, Column (1), I regress social capital on CCC, and this regression is clustered at the firm, year, and country level. Economically, a one standard deviation increase in country-level SCP increases the days it takes to get cash back after investing in inventory, receivables, and payables (CCC) by 16.20%. These findings are statistically significant at a 5% significance level.

In the extant literature, particularly North American studies, the prevailing social norms of a particular region are associated with positive attributes such as reducing financial report mistakes, enforcing the contract, ameliorating the tension between shareholders and management, and reducing the collateral requirement for borrowing (see, for example, Hasan et al. 2017; Knack and Keefer 1997; Zak and Knack 2001; Jha and Cox 2015; Huang and Shang 2019; Meng and Yin 2019; Jha 2019).

This study brings to light the dark side of social capital. I argue that the headquartered locations of firms deemed as high social capital influence firms to be altruistic and charitable and not collect cash (credit lending) in a short period of time after the transaction with traders, thereby increasing the number of cash conversion cycle (CCC) days. This is consistent with the moral hazard theory because the high social capital environment has a built-in social safety net and norms that managers can lean on if the firms' operations cease. As a result, agents of firms in such high social capital environments take liberties, build up account receivables, and finance the operations of their trading partners (Petersen and Rajan 1995). However, these may end up not being collected at all, deteriorating the account quality of the firm (Shin and Soenen 1998), and negatively impacting the firm's profitability. This is in line with the argument by Jensen and Meckling (1976), where agents and principals have divergent views. Another insight from this research is that with an increase in the number CCC days, the firm's ability to honor financial obligations, especially in the short term, will be impaired and expose the firm to reputational risk and financial constraints consistent with the liquidity theory of trade credit (Petersen and Rajan 1995).

Robustness Checks: Endogeneity

The results are undoubtedly free from reverse causality, as the social capital formation is not the result of the cash conversion cycle (CCC). However, the results are not free from unobservable and observable omissible variable biases. To address these concerns, I employed industry, firm, year, and country fixed effects, and the results did not change. In Table 2, Column (2), the relationship between SCP and CCC remains positive, and the magnitude of the estimate increases by about 117% from the results of Column (1) after controlling for firm-level and country-level variables and also controlling for industry, firm, year, and country differences through fixed effects. This is economically and statistically significant as a one standard deviation increase in SCP increases CCC by 40 percentage points.

The results, so far, presented: I have tried to mitigate the impact of endogeneity. To further insulate the findings against confounding variables, I also employ instrumental variables through the two-stage least squares (2SLS) approach to address possible endogeneity of the independent

variable (SCP). The instrument employed for social capital is the index of the historical prevalence of infectious disease (Murray and Schaller 2010). This instrument satisfies the exogeneity requirement because it has no direct impact on CCC unless through country-level social capital. Again, it meets the relevance requirement because it is correlated with the country-level social capital and uncorrelated with the residual term.

The following studies provide insights into the association between social capital and infectious diseases (Le 2013; Varnum 2014). They argue that low historical disease burden and prevalence promote social capital and trust. Thus far, Column (3) of Table 2 indicates that after instrumentalizing SCP, the coefficients remain positive and statistically significant at 10% significance. This supports the findings that the high social capital of firms' headquarters increases the number of days of the cash conversion cycle (CCC).

Lastly, in Column (4) of Table 2, to dispel any idea that because this study covers over 21 countries, the results are potentially driven by the world's largest economies, China was dropped from the sample, and the regression results did not change.

V. Conclusion

I have empirically investigated whether country-level social capital influences firms and their decision-makers in such a way that they increase their cash conversion cycle. Previous and related studies have argued about the benefits of country-level social capital (see Pasiouras and Samet 2022; Knack and Keefer 1997). The main idea that motivates this research is that the social norms of where a firm is situated (headquartered) influence the investment and financial decisions of the firm. I argue that high social capital fosters a strong bond of association among the members and, in that sense, serves as a societal safety net that encourages members to take liberties. Consistent with the moral hazard theory, firms and their management's attitude are laissez-faire and allow longer trade credit terms after they engage in a transaction. Thus, firms in high social capital countries will have longer capital conversion cycle days than firms in lower social capital countries.

The empirical test shows that a country's social capital increases the number of days of the cash conversion cycle (CCC) of firms situated in a high social capital environment. Based on this finding, I conclude that high social capital is associated with good virtues but can also produce bad tendencies and reduce firm value because management is complacent and allows a longer time period before collecting cash after a transaction. This ignites information asymmetry, free cash flow, moral hazards, and credit liquidity theories (Jensen and Meckling 1976).

This research contributes to the growing literature on the critical role that non-financial factors such as societal norms and networks play in corporate decisions. Thus far, I have provided evidence that the high social capital of a country increases the cash conversion cycle of firms headquartered in such countries. The results are robust to industry, firm, country dummies, and other model specifications.

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