Unveiling the Dark Side: Social Capital's Role in Corporate Corruption Risks in Developing Countries

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Abstract: Using data from 1,831 unique firms operating in 20 developing countries from 2007–2021, this paper examines how social capital impacts corporate corruption. While the bright side of social capital encourages collective action, fostering a culture of accountability in firms, the dark side promotes impunity and groupthink, disregarding moral considerations to maintain group harmony. We test these alternative outcomes and find that the dark side of social capital is more prevalent in developing countries, where social capital has a positive and significant effect on corruption. The positive association between social capital and corruption is stronger during periods of uncertainty and geopolitical risk. Furthermore, the dark side is dominant for purely domestic firms when facing high market competition, low cash holding, and high R&D intensity. Heterogeneity analysis further reveals that this positive association is pronounced in countries with weaker institutional quality and more altruistic societies. Our results remain robust after controlling for endogeneity and employing alternative estimation strategies and measures of social capital and corruption. Overall, the findings indicate that in developing countries, cultural and institutional factors shape social norms, where personal, family, and civic connections hold more significant influence than institutional trust, thereby leading social capital to impact corporate corruption positively.

JEL Classifications: G12, G15, G18

Keywords: Social capital, corruption, institutional quality, multinational firms.

1. Introduction

The relationship between corporate corruption and social capital is complex and requires multifaceted approaches. Social capital encompasses the networks of trust and reciprocity that bind communities together and dictate how individuals interact with one another (Knack & Keefer, 1997; Pillai et al., 2017; Putnam, 1993). While corporations themselves do not make decisions, their managers do, and they are likely influenced by the level of social capital in the community. Past research has shown that social capital positively impacts firm performance, underscoring its role in fostering a functional market economy based on trust and fair competition (Fukuyama, 1995). On the other hand, corporate corruption and unethical practices can manifest in various forms, such as money laundering, bribery, tax fraud, unethical data breaches, worker discrimination, and human rights violations (Banerjee et al., 2022). Social capital fosters cooperation, encourages collective action, and promotes shared responsibility among firms, creating a culture of accountability that deters corrupt behaviors. With increased connectivity and long-term interpersonal relationships, instances of corruption are more likely to be exposed and punished, incentivizing firms to act responsibly to protect their reputation and relationships within the community. Ultimately, a strong social capital network can significantly reduce corruption risks at the firm level.

Although strong social capital can bring many benefits to a firm, there is a dark side that can promote corruption. In particular, a culture of impunity may emerge, leading firms to protect certain groups and engage in unethical behaviors (Gargiulo & Benassi, 1999; Gargiulo & Ertug, 2006; Locke et al., 1999). In such instances, how firms perceive corruption may differ across cultures. In societies with strong social ties, collusive agreements can facilitate bribery within networks of firms. Additionally, social networks and cultural factors can limit public actions and the extent to which corruption is punished in those societies (Pena López & Sánchez Santos, 2014). Shared social identities can lead to groupthink, where moral

considerations are disregarded to maintain group harmony. This characteristic of social networks is often referred to in the literature as the "dark side" of social capital, contributing to increased corruption at the firm level (Adaman & Odabaş, 2014; Gargiulo & Benassi, 1999).

In this paper, we analyze the competing premises and assess whether the negative consequences of social capital outweigh its positive effects in the context of corporate corruption. We investigate this from the perspective of developing countries, which are more susceptible to corporate corruption due to their cultural traits and weak institutional quality (Baughn et al., 2010; Clarke & Xu, 2004). The paper contributes to the literature in several ways. Above all, very little is known to date about how social capital influences firm-level corruption. As argued above, social capital has both a bright and a dark side, which can influence firm-level corruption in opposing directions. Social and cultural factors play a crucial role in distinguishing between positive and negative social capital, leading firms in certain countries to exhibit a higher risk of corruption than others (Pena López & Sánchez Santos, 2014). Therefore, the impact of social capital on corporate corruption remains an open question in behavioral finance and economics.

Moreover, the literature on social capital and corruption is minimal at the firm level, particularly outside the United States (US) and European countries. Previous studies often rely on country-level corruption data, e.g., the International Transparency Index, to explore its relationship with social capital (Pena López & Sánchez Santos, 2014). However, country-level corruption perception data may be biased and may not reflect firm-level corruption practices accurately (Banerjee et al., 2022). In this study, we use firm-level corruption data from 20 low—and middle-income countries to examine its relationship with social capital, which we believe constitutes a significant contribution to the literature.

Next, previous studies utilizing social capital and firm performance metrics such as corporate social responsibility (CSR), innovation, debt contracting, tax avoidance, trade credit, payout policies, and cash holdings are primarily focused on the US (Habib & Hasan, 2017; Hasan et al., 2017; Hasan & Habib, 2019; Hoi et al., 2018; Jha & Chen, 2015; Jha & Cox, 2015). Evidence utilizing firm-level performance data on a cross-country basis involving diverse cultures and regulations is almost absent. Pasiouras and Samet (2022) are among the exceptions, examining the impact of social capital on the cost of bank equity in 67 countries worldwide. They find that higher social capital is associated with a lower cost of equity. However, none of these studies examine the effect of social capital on corporate corruption, especially in developing countries where data is scarce. Thus, we significantly contribute to the literature in this nascent area.

We also explore several essential channels through which social capital can impact firm-level corruption. First, we investigate whether periods of high economic uncertainty and geopolitical risk moderate the relationship between social capital and corruption. Several studies indicate that firms' attitudes towards corruption change during periods of uncertainty, often to diversify risks and protect against future crises (Afzali et al., 2021; Banerjee et al., 2022; Pástor & Veronesi, 2013). Trust levels and the strength of social networks tend to decrease when economic uncertainties are high, potentially affecting social capital levels. Concurrently, during periods of uncertainty and high geopolitical risk, firms are more vulnerable to lower levels of capital flows, investment, and growth (Feng et al., 2023; Lee & Wang, 2021), which could lead to a higher risk of corruption. Therefore, it is reasonable to expect that during periods of high policy uncertainty and geopolitical risk, the dark side of social capital would be more influential than the bright side, resulting in increased firm-level corrupt behaviors. Currently, there is no empirical research linking the impact of social capital

on corporate corruption during periods of high versus low policy uncertainty and geopolitical risk.

In a similar vein, we also examine the moderating role of certain firm-level and country-level factors previously identified as critical determinants of firm-level corruption in the presence of social capital. The firm-level factors include industry competition, cash holdings, and R&D intensity. All these factors have been found to be important determinants of firm-level corruption in prior studies (Banerjee et al., 2022; Borisov et al., 2016; Emerson, 2006; Lin et al., 2015; Sharma & Mitra, 2015; Tran, 2020). For example, firms in regions of the US with high social capital tend to hold less cash (Habib & Hasan, 2017), are more innovative (Hasan, Wu, et al., 2020), and are less likely to engage in tax avoidance (Hasan et al., 2017). However, other studies have shown that firm innovation may have a U-shaped relationship with social capital, especially in developing countries like Taiwan (Yu, 2013).

Country-level factors, such as the level of altruistic culture and institutional quality, also influence the strength of social capital and consequently affect corruption levels in economies. For instance, Pena López and Sánchez Santos (2014) find that universalistic trust positively influences social capital and thereby reduces corruption levels. Therefore, philanthropic cultures and robust institutional frameworks in countries with high levels of social trust are effective in combating corruption (Bjørnskov, 2011). Conversely, individualistic cultures can undermine social trust and contribute to higher corruption levels. At the institutional level, firms in emerging and developing countries are more susceptible to lobbying and corruption risks (Clarke & Xu, 2004). However, in countries with strong institutional quality, such as effective rule of law, government effectiveness, and corruption control, firms are more likely to face consequences if involved in corrupt activities (Banerjee et al., 2022). Moreover, institutional complementarities can lead to strong economic performances even in low-trust societies, as observed in countries like South Korea and France (Yoo & Soo Hee, 2009).

Therefore, it is crucial to investigate how these factors moderate the impact of social capital on firm-level corruption in developing markets.

Finally, we examine whether the degree of internationalization affects how social capital influences corrupt behaviors. Recent anecdotal evidence highlights numerous unethical and corruption issues involving multinational corporations operating in developing countries such as China, India, Brazil, and Malaysia (Brooks, 2019; Reuters, 2023; Savage, 2023; Thakurta & Dasgupta, 2018; Ting, 2023). According to the Corporate Legitimacy Theory, companies in emerging markets establish global credibility by proactively disclosing their CSR initiatives (Agnihotri & Bhattacharya, 2019). Regional social capital plays a crucial role in fostering positive CSR activities driven by altruistic tendencies nurtured through social capital (Hoi et al., 2018; Jha & Chen, 2015). Therefore, we anticipate variations in the relationship between social capital and corporate corruption in emerging market firms, depending on the extent of their internationalization.

Our primary finding is that the dark side of social capital is more pronounced in developing countries, where social capital exerts a positive and statistically significant effect on firm-level corruption. These results are economically significant, showing that an interquartile increase in the prosperity index (from the 25th to the 75th percentile) leads to a 40.68% increase in corruption among the sample firms. Furthermore, the positive impact of social capital is exacerbated during periods of high policy uncertainty. Social capital's positive influence on corruption is amplified when firms face high market competition, maintain low cash reserves, and have high R&D intensity. Similarly, we find that the positive association between social capital and corruption is more pronounced in countries with weaker institutional quality. Interestingly, we observe that the positive effect of social capital on corruption is stronger in altruistic societies. This finding may suggest that strong, close-knit social ties enable businesses to leverage collective altruistic trust in society for their benefit while the general

population remains compliant and too trusting to voice concerns (Gargiulo & Ertug, 2006). The findings indicate that cultural factors shape social norms in developing countries, where personal, familial, and civic connections wield greater influence than institutional trust. Consequently, social capital tends to positively impact corporate corruption. Finally, we find that the positive effect of social capital on corruption diminishes with the degree of firm internationalization and becomes negative and significant for firms with global operations. For multinational firms in emerging markets, social capital serves as a disciplinary force that enhances their legitimacy in global markets by reducing corruption. These results remain robust after controlling for endogeneity and employing alternative estimation strategies such as two-stage least squares (2SLS) regressions, propensity score matching, entropy balancing, and using alternative measures of social capital and corruption.

The rest of the paper is structured as follows. Section 2 discusses the theoretical linkages between corruption and social capital and develops the hypotheses. Section 3 presents the data and empirical methodology. Section 4 discusses the results. Section 5 concludes the discussion and provides directions for future research.

2. Background literature and hypotheses development

Early literature highlighting the bright side of social capital defines it as community networks based on trust and cooperation (La Porta et al., 1997; Putnam, 1993). These networks emerge when individuals and organizations engage in civic matters involving reciprocity, solidarity, and bonding. Civic norms are crucial for building trust and establishing common mental frameworks within a community (Knack & Keefer, 1997). Previous studies focusing on community social capital have underscored its significance as a public good, indicating its profound effects on individuals with high social capital and those residing in areas with strong community ties (Guiso et al., 2004; Putnam, 2001). This fosters a sense of unity and facilitates

the exchange of valuable information, benefiting community members who may not possess significant personal social capital themselves (Kwon et al., 2013). Therefore, social capital can benefit the entire community by promoting human capital accumulation and transferring knowledge from those who possess it to those who lack sufficient resources (Coleman, 1988).

The above theoretical insights have garnered extensive empirical support from several studies. For instance, firms operating in countries with high social capital have been found to promote positive CSR activities and curb negative CSR practices that benefit non-shareholder stakeholders (Hoi et al., 2018). Similarly, banks in high social capital countries experience lower costs of equity (Pasiouras & Samet, 2022). Individuals residing in countries with high social capital also encounter lower moral hazards in insurance markets (Millo & Pasini, 2010), exhibit fewer strategic defaults on mortgages (Guiso et al., 2013), sustainably trade-off between self-enforcement and trade gains (Annen, 2003) and demonstrate greater motivation to pay taxes (Alm & Gomez, 2008). Social capital is also found to strengthen bank stability during periods of financial crisis (Jin et al., 2017). Furthermore, managerial decision-making is likely influenced by regional social capital, particularly where traditions and norms are passed down through generations (Jha & Chen, 2015). In high-trust societies, large firms thrive due to cooperative actions and trust between strangers (Fukuyama, 1995), resulting in reduced opportunistic behaviors such as earnings management (Jha, 2019) and corruption like tax avoidance (Hasan et al., 2017). There is also evidence suggesting that through investments in education, monitoring efforts, and income redistribution, social capital diminishes corruption activities within firms, particularly in the European region (Bjørnskov, 2003). Social capital is also found to strengthen trust and influence bankruptcy negotiations in a positive manner (Jha et al., 2024). While evidence for developing countries remains limited, based on the above findings favoring the bright side of social capital, we formulate our first hypothesis:

H1: Social capital is negatively associated with corruption in developing countries.

Conversely, building on the literature concerning the dark side of social capital, there is a compelling argument that institutional and cultural factors play a pivotal role in shaping the development of social capital (Pena López & Sánchez Santos, 2014). In developing countries, social norms and culture differ significantly from those in developed countries. Despite weak institutional-level trust and civic norms, cultural factors strongly influence how social capital and corruption coexist. This aligns with the 'greasing the wheel' argument for corruption, where firms find it easier to engage in corruption to operate smoothly and avoid bureaucratic red tape in an imperfect institutional setting (Kim, 2014). Corruption in the form of political connections and lobbying can facilitate firms in greasing the system and functioning effectively (Boubakri et al., 2012; Grossman & Helpman, 2001; Leff, 1964; Leys, 1965). Therefore, from an organizational perspective, understanding the dark side of social capital is crucial in exploring how it can impact corruption in developing countries. Whilst the dark side of social capital can hinder a firm's growth due to specific demands and restrictions imposed by powerful managers (Gargiulo & Benassi, 1999), cohesive social bonds within close-knit communities, political connections, and preferential treatment can make firms more productive compared to their peers in developing countries (Ganguly et al., 2023).

Social identification theory suggests that organizations are often controlled by self-serving dominant groups operating within a closed network, resistant to external interference, even if such input could enhance firm value (Locke et al., 1999). In such scenarios, the free flow of ideas is often confined to private networks, fostering the dark side of social capital and benefiting insiders within the same community. This can lead to parochialism, groupthink, and inertia, contributing to corruption within firms (Pillai et al., 2017). Groupthink occurs when members of a specific group within an organization share similar mindsets and goals, believing these will benefit them in the long term (Byrne, 1971). According to the cognitive theory of social capital, groupthink can foster corruption within firms when perceived as beneficial to

influential group members such as managers and board members (Villena et al., 2011). Strong social ties and excessive trust can reduce client monitoring, leading to agency costs, fraud, and corruption (Gargiulo & Ertug, 2006). In such scenarios, higher social capital within the community may incentivize firms to engage more in corrupt activities. Motivated by arguments favoring the dark side of social capital, we formulate our alternative hypothesis:

H2: Social capital is positively associated with corruption in developing countries.

2.1. Role of risk and uncertainty

According to the bright side of social capital theory, a strong level of social capital can protect businesses during periods of uncertainty and risk when information asymmetry between borrowers and lenders is high (Galardo et al., 2019). Social capital can benefit firms during times of economic uncertainty by fostering increased levels of CSR activities and sending positive signals to shareholders (Peng et al., 2023; Yuan et al., 2022). Developing countries with weak institutional quality are particularly vulnerable to economic uncertainties (Ahir et al., 2022). Furthermore, higher economic uncertainty and geopolitical risk are linked to reduced firm-level investment and growth (Baker et al., 2016; Caldara & Iacoviello, 2022), increased variability in capital flows, and poorer performance in environmental, social, and governance indicators (Abdullah et al., 2024; Feng et al., 2023).

Additionally, corruption literature suggests that firms may resort to increased corruption to protect themselves from heightened risks and potential financial crises (Banerjee et al., 2022; Pástor & Veronesi, 2013). Firms often increase lobbying efforts during periods of economic policy uncertainty to mitigate risks (Shang et al., 2021). Economic uncertainty tends to be more pronounced in developing and emerging countries compared to developed countries (Carrière-Swallow & Céspedes, 2013; Miescu, 2023). During such uncertain times and amid high geopolitical risks, firms in developing countries tend to hold more cash as a precautionary

measure against large capital expenditures (Lee & Wang, 2021; Zhao & Niu, 2023). Moreover, firms facing financial constraints in developing and emerging economies are more likely to increase cash holdings and engage in corruption (Ullah, 2020). Managers also tend to employ internationalization strategies during periods of policy uncertainty to diversify domestic risks (Hill et al., 2019). Thus, both economic policy uncertainty and geopolitical risk can act as moderating factors for how social capital influences corruption in less developed economies. Currently, no study distinguishes between the effects of bright versus dark social capital on corporate unethical behaviors during periods of high geopolitical risk and economic uncertainty.

2.2.Firm-level and country-level factors

The existing literature indicates that certain firm-level factors, such as cash holding, R&D intensity, and industry competition, can moderate the relationship between social capital and corporate unethical behaviors. Politically connected firms in India, for instance, are found to be more innovative, hold higher cash reserves, and perform better compared to their non-politically connected counterparts (Ganguly et al., 2023). Additionally, corrupt businesses tend to maintain lower cash reserves but higher levels of debt as a strategy to minimize the risk of exploitation by corrupt government officials (Smith, 2016). Thus, cash holding emerges as a significant determinant of corruption in the context of social capital. Moreover, corporate innovation often presents ethical dilemmas due to market competition, which may lead firms to engage in corrupt practices (Banerjee et al., 2022; Xie et al., 2019; Xu et al., 2019). Similarly, firms in industries facing intense competition from their peers are more likely to engage in corruption (Alexeev & Song, 2013; Bennett et al., 2013). Based on this evidence, we hypothesize that the positive association between social capital and corruption will be stronger for firms experiencing higher competition, lower cash holdings, and greater involvement in research and development (R&D) activities.

In terms of country-level factors, prior studies have shown that societies with strong property laws and institutional quality tend to have higher levels of trust and civic norms, thereby reaping the benefits of social capital (Knack & Keefer, 1997). Countries with robust institutional quality and civic rights, such as OECD countries, typically experience the positive impacts of social capital profoundly. However, this scenario is less common in less developed countries, where negative externalities of social capital can coexist alongside its benefits. Developing countries often face challenges related to lobbying and struggle with effective corruption control (Clarke & Xu, 2004), which can hinder long-term economic development (Shleifer & Vishny, 1993). The general argument posits that cohesive structures and exclusive closed networks can transform social capital into a liability for managers, reducing performance and adaptability and potentially increasing corruption (Gargiulo & Benassi, 1999). Conversely, well-organized and coordinated institutional arrangements can lead to strong economic performance even in low-trust societies, as observed in cases like South Korea and France (Yoo & Soo Hee, 2009).

In many developing and emerging economies, corruption is often perceived as commonplace, with individuals engaged in such practices sometimes unaware of their wrongdoing (Adaman & Odabaş, 2014). Institutions are broadly defined as the "rules of the game" in society, and for ordinary individuals, it is generally easier to abide by these rules than to attempt to change them (North, 1990). Cultural norms evolve slowly, and civic engagement is often based on pre-existing social norms of cooperation and opportunism. Individualistic cultural norms can contribute to the dark side of social capital and exacerbate corruption activities (Pena López & Sánchez Santos, 2014). The denser the civic engagements that span societal divisions, the stronger the influence of social capital (Putnam, 1993). Corruption may be perceived as normal and aligned with cultural norms in developing societies with low institutional quality. Since community members typically share similar ideological and political

beliefs, firms in these countries will likely behave accordingly. This situation fosters corruption through rent-seeking, illicit transactions, and preferential treatments, which may be normalized within their communal bonds (Adaman & Odabaş, 2014).

Low levels of social trust are expected in environments with poor institutional quality, and these economies often struggle to combat corruption effectively (Bjørnskov, 2011; Uslaner, 2008). Conversely, where social trust is high, there may be less perceived need for vigilant oversight, allowing firms to exploit this trust to engage in corrupt activities (Gargiulo & Ertug, 2006). The general populace might remain compliant and hesitant to question the ethical conduct of firms. Additionally, according to the Moral Licensing Theory, individuals who engage in altruistic behavior and perceive their actions as moral may subsequently exhibit attitudes and behaviors that are immoral and unethical (Lasarov & Hoffmann, 2020; Merritt et al., 2010). Ironically, strong social capital can be associated with higher corruption activities in societies characterized by high altruism, where social capital operates within tightly knit communities with significant levels of preferential treatment.

Thus, we hypothesize that poor institutional quality, such as weak rule of law and governance, encourages social capital to foster corruption. However, the role of altruistic cultural traits in moderating the relationship between social capital and corruption remains largely unexplored.

2.3.Internationalization of firms

Contemporary literature and anecdotal evidence highlight that multinational corporations often exploit the poor institutional quality of developing countries through bribery and lobbying to establish themselves in the market. Recent events have revealed numerous ethical and corruption controversies involving multinational corporations operating in developing countries such as China, India, Brazil, and Malaysia, among others (Brooks, 2019;

Reuters, 2023; Savage, 2023; Thakurta & Dasgupta, 2018; Ting, 2023). Despite these challenges, firms remain motivated to pursue internationalization strategies to enhance financial performance. The success of these strategies hinges on factors such as speed, market selection, and the choice of entry mode into foreign markets (Dhanaraj & Beamish, 2003; Jones & Coviello, 2005). For small businesses, particularly small and medium-sized enterprises (SMEs), the relational aspect of social capital—based on trust and goodwill—facilitates smoother resource sharing and exchange, which is crucial for navigating internationalization (Hitt et al., 2002; Kale et al., 2000). SMEs leveraging cross-border co-ethnic social capital often experience enhanced entry into foreign markets (Prashantham, 2011).

However, the increased corruption incidents associated with internationalization raise stakeholder suspicions, especially for firms from emerging markets. These firms face challenges related to their emerging market status, encountering barriers in overseas markets due to perceived legitimacy threats (Marano & Kostova, 2016; Marano et al., 2017). Such challenges may prompt international businesses to scrutinize their dealings with firms from corruption-prone host countries (Sampath & Rahman, 2019). According to the Corporate Legitimacy Theory, emerging market firms can enhance their global legitimacy by proactively disclosing their CSR activities (Agnihotri & Bhattacharya, 2019). Regional social capital plays a role in facilitating positive CSR initiatives driven by altruistic motivations nurtured within social networks (Hoi et al., 2018; Jha & Cox, 2015). Therefore, we anticipate varying associations between social capital and corruption, contingent upon the extent of internationalization among firms from emerging markets.

3. Data and Empirical Methodology

3.1. Data and Sample Construction

We examine the impact of social capital on firm-level corruption using data collected from various sources. Firstly, we extract firm-level corruption data from LSEG Refinitiv Workspace. We merge this data with country-level social capital data from the Legatum Institute. Additionally, we include several country-level variables such as GDP per capita, inflation rate, and institutional quality (control of corruption, rule of law, and ICRG dummy) from the World Development Indicators. Following prior studies that explore the influence of social capital on firm-level decision-making (Papadimitri et al., 2021; Pasiouras & Samet, 2022), we match firm-level information with country-level social capital data based on the location of the firm's headquarters and the stock exchange where they are listed. This approach acknowledges that the location of critical upper-echelon managerial decisions is influenced by regional social capital, even for multinational firms that may be cross-listed in multiple countries. We focus only on equity listed on the home country's stock exchange to avoid duplication. This procedure yields 11,415 firm-year observations involving 1,831 unique firms operating in 20 developing countries during the period from 2007 to 2021.[1] We winsorize the variables at the 1% and 99% levels to avoid outliers disrupting our findings.

3.2. Firm-level Corruption

Our primary dependent variable in this study is a continuous measure of firm-level corruption. Using data from the LSEG Refinitiv Workspace database, we construct this variable, Total Controversies, as a count indicating whether a firm has come under media scrutiny due to corruption controversies. These include issues related to business ethics, tax fraud, anti-competitive practices, public health, and critical countries. The database sources information from company announcements, financial reports, stock market filings, media reports, and other outlets, ensuring a diverse and unbiased data collection process. For

[1] The Legatum Institute's social capital data begins from 2007.

robustness, we also employ two alternative corruption variables. The first proxy, the Corruption Dummy, takes the value of 1 if a firm is highlighted in the media for corruption-related issues such as bribes, political lobbying, money laundering, tax misappropriation, and similar concerns. The second proxy, the Repeat Corruption Dummy, identifies firms that have faced media scrutiny for corruption issues more than once in consecutive years. These proxies are commonly used in prior research examining firm-level corruption (Banerjee et al., 2022; Chatterji et al., 2014; Kim et al., 2020; Krishnamurti et al., 2018).

3.3. Social Capital

In this study, we use the Legatum Institute's *Prosperity index* as the primary independent variable and proxy for social capital. The Prosperity index is constructed as an equally weighted index capturing five dimensions of social capital: civic and social participation (CIVIC), institutional trust (INSTRUST), interpersonal trust (INTTRUST), personal and family relationships (PERSFAM), and social networks (SOCNETW). Theoretically, these dimensions are considerably similar to prior social capital measures used in the US and other country-specific studies (reflecting differences across regions) (Coleman, 1988; Putnam, 2001; Rupasingha et al., 2006), European survey-based databases (i.e., ESS, EVS, and SHARE) (Gannon & Roberts, 2020) and cross-country work considering trust as a central element of social capital (Knack & Keefer, 1997; Ram, 2010). This measure has also been used in many recent studies to capture social capital at the country level (Gaganis et al., 2024; Jabbouri et al., 2024; Papadimitri et al., 2021; Pasiouras & Samet, 2022).

The Legatum Institute developed an optimal structure for the Prosperity Index based on expert advice, comprising 12 pillars underpinned by 67 policy-oriented elements. Data for these pillar areas is collected from a wide range of publicly available data sources. These pillar indicators are standardized and weighed according to their impact on prosperity. The Prosperity

Index is constructed as a population-weighted average of these pillar scores to capture the impact on individuals rather than countries (Legatum-Institute, 2024). This approach provides a uniquely focused measure of community-based social capital. The higher the Prosperity Index score, the higher the level of social capital in the country.

3.4. Control Variables

Based on prior studies, we control for potential covariates affecting firm corruption in the presence of social capital. These controls include firm age, size, dividend dummy, leverage, Tobin's Q, closely held shares, and market-to-book value ratio. In addition, due to the cross-country setting of our study, we control country-level factors, such as inflation and GDP per capita. Studies have shown that firm age and size are determining factors in the propensity for firms to engage in corrupt practices (Bai et al., 2019; Fisman et al., 2024; Hsieh & Olken, 2014; Huang & Yuan, 2021). Moreover, due to heightened agency costs, corruption and dividend payouts are also positively associated (Hossain et al., 2021; Tran, 2020, 2021). Furthermore, firms facing higher local corruption probabilities tend to have higher leverage compared to firms from lower corruption areas (Smith, 2016). Furthermore, studies have also shown that firm-and-country-level corruption has multi-dimensional impacts on firm valuation (Dass et al., 2016; Pan & Tian, 2020; Pantzalis et al., 2008). Lastly, blockholding, proxied by the proportion of closely held shares, has an internal governance implication, with firm-level corruption found to be significantly lower for high blockholding compared to low blockholding firms (Banerjee et al., 2022).

3.5. Summary Statistics

Table 1 shows the sample distribution of the data. Panel A provides the annual distribution of firm-year observations in our sample, covering the period 2007-2021. The number of firm-year observations steadily increases over the years, starting with 41 observations (0.33% of the

total sample) in 2007 and peaking at 2,424 observations (19.47%) in 2021. The average Prosperity Index shows a general upward trend, beginning at 56.21 in 2007 and reaching 61.59 by 2021. Interestingly, the average number of Total Controversies remains relatively low throughout the period, slightly decreasing from 0.10 in 2007 to 0.03 in 2021. The higher figure in 2007 is likely due to the peak of the global financial crisis of 2007-08. Panel B presents the country-wide distribution of firm-year observations in our sample. The largest representation comes from China (CHN), with 3,289 observations (26.41% of the total sample), followed by India (IND) with 1,381 observations (11.09%), and South Africa (ZAF) with 1,083 observations (8.7%). The average Prosperity Index varies significantly across countries, with South Africa having the highest average of 72.52 and Egypt (EGY) having the lowest at 47.46. The average number of Total Controversies also varies, with India showing the highest average at 0.19.

[Insert table 1 here]

Table 2 presents the descriptive statistics of all variables. The mean value of Total Controversies is 0.11 with a standard deviation of 0.65. The Prosperity Index has a mean of 60.87 and a standard deviation of 5.88, with its interquartile range (IQR) suggesting moderate variability. The natural logarithm of firm age (Ln Age) has a mean of 3.24 and an IQR between 2.83 and 3.74, signifying a mature sample set of firms. The Dividend Dummy indicates that 88% of firms pay dividends. Leverage averages 25.78%, with considerable variation, as shown by a standard deviation of 17.77%. Tobin's Q has a mean of 1.49, indicating that, on average, firms are valued higher than their assets. Closely Held Shares average 49.72%, reflecting significant blockholding and insider ownership in our sample firms from developing markets. The mean inflation rate is 3.49%, and the average natural logarithm of GDP per capita is 8.93 with significant standard deviations, reflecting the economic diversity of the sample. The correlation matrix in Appendix B further demonstrates the absence of significant correlations

between the independent variables, ruling out concerns about potential multicollinearity bias affecting our findings.

[Insert Table 2 here]

3.6. Empirical Model

We use the following baseline ordinary least squares (OLS) fixed effect regression model, following prior studies (Banerjee et al., 2022; Pasiouras & Samet, 2022), to empirically examine the impact of social capital on firm-level unethical and corrupt business practices:

$$Total\ Controversies_{i,j,c,t} = \alpha_0 + \alpha_1 Prosperity\ Index_{c,t} + \sum \alpha_2 Controls_{i,j,c,t} + \gamma + \delta + \theta + \varepsilon_{i,c,t} \quad (1)$$

where *Total Controversies*$_{i,t}$ is the firm-level continuous measure for corruption for firm *i* in industry *j,* country *c,* and year *t,* and *Prosperity Index*$_{c,t}$ is the social capital in country *c* and year *t*. Our primary coefficient of interest in this model is α_1. As stated above, the set of firm and country-level controls are included in this model. We also include industry (γ), country (δ), and year (θ) fixed effects to control for time-invariant factors, unobserved heterogeneity, and omitted variable bias.

4. Empirical Results

4.1. Baseline results

We employ OLS fixed effects regressions to examine the impact of social capital on firm-level corruption, with heteroskedasticity-adjusted standard errors clustered at the country level. Specifications 1-3 demonstrate the results with the inclusion of year and industry fixed effects, and specifications 4-6 include year, industry, and country fixed effects. Specifications

1 and 4 present the results of the bivariate model by regressing Total Controversies against only the Prosperity Index. Specifications 2 and 5 incorporate the firm-level control variables, while specifications 3 and 6 incorporate the addition of country-level controls, reducing omitted variable bias concerns.

[Insert Table 3 here]

The findings show that even after controlling for all the firm and country-level controls, social capital has a positive and statistically significant association with total controversies across all the specifications. In specification 6, with firm and country-level controls and the inclusion of year, industry, and country-fixed effects, the coefficient of the Prosperity Index (0.0860) is statistically significant at the 1% level. These findings are also economically significant. A 1% increase in the prosperity index (social capital) would lead to an approximately 8.60% increase in the corruption of sample firms. Moreover, an inter-quartile increase in the prosperity index (from the 25th to the 75th percentile) would lead to an increase of 40.68% [= 8.60% × (62.51 – 57.78)] in sample firm corruption. These findings align with the argument of 'greasing the wheel' (Kim, 2014) and support the hypothesis (H2) that networks based on trust and cooperation, central to social capital, can also facilitate unethical firm practices in developing countries. The dark side of social capital is dominant where close-knit communities can instigate groupthink and inertia, leading to corruption in firms (Pillai et al., 2017).

The control variables of this study demonstrate coefficients similar to the literature. Instances of corruption are more prevalent among larger and older firms, as well as those paying fewer dividends and holding less leverage (Bai et al., 2019; Dass et al., 2016; Huang & Yuan, 2021; Pan & Tian, 2020). Moreover, firms with higher market value and less block holding also find themselves in the media spotlight for unethical incidents. In addition, firm-

level corruption also increases during periods of high inflation and when the country has a lower GDP per capita.

4.2. Impact of Risk and Uncertainty

In this section, we explore the moderating effect of risk and uncertainty in the association between social capital and corruption. We proxy for policy uncertainty in the economy through three measures: the Geopolitical Risk Index (GPR) (Caldara & Iacoviello, 2022), the Economic Policy Uncertainty (EPU) index (Baker et al., 2016) and the World Uncertainty Index (WUI) (Ahir et al., 2022). For each of these indices, we create a dummy variable with a value of 1 if the country-year value is greater than the sample median and 0 otherwise. Our variable of interest is the interaction between the uncertainty and risk index with the social capital (prosperity) proxy.

[Insert Table 4 here]

In Table 4, we report the results for the effect of economic policy uncertainty and risks measured by geopolitical risk and world uncertainty index. Specifications 1-3 present the results for High GPR, High EPU, and High WUI, respectively. The coefficients of the Prosperity Index and social capital are positive and significant for specifications 1 and 2, but insignificant for specification 3. Interestingly, the interaction terms between each uncertainty variable and the Prosperity Index show a significant positive association. This suggests that the relationship between social capital and corruption is amplified during periods of high economic policy uncertainty. Specifically, in environments with elevated geopolitical risk or economic policy uncertainty, the presence of strong social capital is more likely to lead to more unethical firm practices. This finding highlights that social capital, while typically viewed as beneficial, can have a darker side during economic uncertainties, potentially facilitating more corruption as firms seek to navigate and mitigate risks. These results align with existing literature

demonstrating that in times of heightened uncertainty, the mechanisms of trust and reciprocity embedded in social capital may be exploited to engage in ethically questionable behaviors (Banerjee et al., 2022).

4.3. Impact of firm-level factors

We further explore the moderating effect of firm-level factors, such as cash holding, R&D intensity, and industry competition, on the association between social capital and corporate corruption. All these factors have been previously found to be important determinants of firm-level corruption (Banerjee et al., 2022; Borisov et al., 2016; Emerson, 2006; Lin et al., 2015; Sharma & Mitra, 2015; Tran, 2020). To test the joint effect of these firm-level factors with social capital, we construct dummy variables for industry-sales HHI index and R&D expenses (R&D expenses to sales) taking the value of 1 if their values are greater than the median value and 0 otherwise. To examine the effect of low cash holding, the dummy variable takes the value of 1 if firm cash holding (cash and short-term assets to total assets) is lower than the median and 0 otherwise. Our variable of interest in this test is the interaction between social capital and the firm-level factor dummies.

[Insert Table 5 here]

In Table 5, we report the interaction analysis of firm-level factors with social capital. The findings show a significant positive effect of the interaction term, indicating that the association between social capital and corruption is stronger for these firm-level factors. Specifically, the interaction terms highlight that the presence of certain firm characteristics, such as high market competition, lower cash holdings, and high R&D intensity, amplifies the influence of social capital on corruption within firms. This further suggests that firms operating in highly competitive markets are more likely to leverage the impact of local social capital in ways that lead to corruption, perhaps as a means of gaining a competitive advantage or survival.

Additionally, firms with fewer cash reserves feel a greater need to engage in corrupt behaviors to navigate financial constraints and political connections or avoid exploitation. Similarly, high R&D intensity, which often correlates with innovation and technological advancement, may drive firms to adopt corruption to secure intellectual property, expedite development processes, or overcome competitors. These results align with existing literature, which posits that the ethical implications of social capital are context-dependent and can vary significantly based on external pressures and internal firm characteristics (Alexeev & Song, 2013; Banerjee et al., 2022; Bennett et al., 2013; Xie et al., 2019; Xu et al., 2019).

4.4. Impact of Institutional Quality and Culture

In this section, we investigate the moderating effect of country-level institutional quality proxies and cultural traits. Our key motivation in this section is to examine whether social capital in developing countries leads to more corruption where institutional quality is lower, and the national culture is more altruistic in nature. We use three different commonly used measures of institutional quality from the World Bank. They are the rule of law, control of corruption, and government effectiveness. We define a firm located in a country with strong (weak) institutional quality if the variable value is above (below) the median value. We further examine the effect of whether a firm is operating in an altruistic society on the examined association between social capital and corruption. We use data on the geographic dispersion of altruistic behavior, constructed based on seven subjective and objectively measured altruism (Rhoads et al., 2021), matched for the headquarters countries of our sample firms. Table 6 presents the results for this country-level analysis. We define a firm located in a country with a strong (weak) altruistic culture if the variable value is above (below) the median value.

[Insert Table 6 here]

We re-estimate our baseline model for the subsamples of stronger and weaker institutional quality and societal altruism in Table 6. Across the three institutional quality measures, we find that the prosperity index has a positive (negative) and statistically significant coefficient with firm corruption when institutional quality is weak (strong). This demonstrates that strong institutional quality acts as a disciplinary factor that limits the dark side of social capital in corporate behavior. However, when a firm operates in a weak institutional quality setting, the absence of disciplinary force leads to the prevalence of the dark side of social capital. As a result, in weak institutional quality settings, higher social capital leads to more corruption.

Furthermore, models 7 and 8 demonstrate the subsample analysis results for strong (weak) altruism cultures. We find the coefficient for the prosperity index to be statistically significant and positive (negative) when it operates in a strong (weak) altruistic cultural community. The findings, although surprising, are consistent with the fact that the dark side of social capital can act as a facilitator for corruption even in high-trust societies. Excessive trust increases social capital as relationships grow stronger between parties and reduces the need for monitoring, leading to blind faith and malpractices within organizations (Gargiulo & Ertug, 2006). While altruism generally fosters societies based on trust, goodwill, and the expectation that individuals will look after one another, it may also create an environment where people become less vigilant and overly trusting. As a result, corruption may start to build up through the exploitation of altruistic values for personal gain. Unethical and corrupt businesses may take advantage of collective altruistic trust to benefit themselves while the general population remains complacent and too trusting to question. For example, a positive association was identified between altruistic firm motives and consumer attitudes toward advertisements, with improved consumer perception of a company through CSR activities (Szykman et al., 2004;

Yoon et al., 2006). Therefore, social capital can positively affect the unethical actions of firms in societies with high altruistic values.

4.5. Impact of Firm Internationalization

In this section, we examine how the degree of internationalization by firms impacts the nexus between social capital and corruption in two ways. First, we create a foreign sales dummy that takes the value of 1 if a firm has reported foreign sales to total sales, and 0 otherwise (data collected from LSEG Refinitiv Workspace). We then interact the foreign sales dummy with the prosperity index and re-estimate our baseline regressions with all the control variables. Specification 1 in Table 7 reports the findings. We find the coefficient of the prosperity index to remain positive and statistically significant. However, while the coefficient of the foreign sales dummy is statistically significant and positive, the interaction term is negative and significant at the 1% level. This indicates that while social capital and firm internationalization positively correlate with corruption, their joint effect is negative. Therefore, social capital disciplines firms with global operations from engaging in corruption.

[Insert Table 7 here]

To investigate this further and determine whether the positive effect of social capital diminishes with the degree of firm internationalization, we re-estimate our baseline regression model for subsamples of firms with different quartiles of foreign sales to total sales[2]. While the bottom quartile (Q1) reflects domestic firms with no internationalization, the top quartile (Q4) represents firms with the most internationalized operations. For purely domestic firms, we find that the coefficient for the prosperity index is positive and statistically significant at the 5%

[2] The sample size for the lowest quartile of foreign sales to total sales (Q1) is larger, as a majority of our emerging market firm sample are purely domestic in their operations.

level, again supporting the dark side of the social capital argument. However, we find that the coefficient for the prosperity index shows a gradual reversal over the degree of firm internationalization in specifications 3 and 4. In the middle quartiles (Q2 and Q3), the positive effect of the prosperity index continues to decline until it becomes negative. For firms with the highest level of internationalization, as shown in specification 2, the coefficient of prosperity index is negative and statistically significant at the 5% significance level. Thus, the effect of the dark side of social capital fades as firms become more global in their operations, and it becomes a disciplining force for the highest degree of internationalization. As emerging market firms become more multinational, social capital facilitates their efforts to gain legitimacy in the global markets.

4.6. Endogeneity Checks

So far, our results support the primary hypothesis that higher social capital is associated with corruption in developing countries. However, our results might be vulnerable to endogeneity concerns, which can obscure the causal relationships between variables. Although reverse causality is less of an issue in our research setting, as it is difficult to argue that the unethical behavior of individual firms could affect the formation of a country's social capital, we may still face endogeneity issues due to omitted variable bias, measurement error, or sample selection bias. To address these concerns, we employ two-stage least squares regressions (2SLS) using instrumental variables (IV), propensity score matching, and entropy balancing.

First, we employ 2SLS regressions using instrumental variables to mitigate endogeneity concerns. 2SLS regressions are a widely used econometric technique that helps mitigate endogeneity concerns by addressing simultaneous causality between variables. An ideal instrument should satisfy two criteria – the relevancy criterion and the exclusion condition. The relevancy criterion is satisfied when the instrument is related to social capital but does not

affect corruption through other channels except its direct effect on social capital. The exclusion criterion would be satisfied if no prior theoretical argument or empirical evidence links the instrument with corruption. Based on prior studies and examined relationships, we consider two instruments: pathogen and infectious disease prevalence, and ethnic fractionization (Hasan et al., 2017; Pasiouras & Samet, 2022).

Following Pasiouras and Samet (2022), we use Disease Prevalence as our first instrument. Earlier studies found an inverse relationship between pathogens and infectious disease prevalence with social capital and trust (Le, 2013; Thornhill & Fincher, 2014). For instance, Thornhill and Fincher (2014) suggest that reduced parasite stress can foster an individualistic value system characterized by anti-authoritarianism, tolerance, and trust toward out-groups, promoting interactions and support for diverse others. Supporting this notion, Le (2013) demonstrates that lower historical disease burdens and prevalence of infectious diseases are linked to increased trust and social capital. Furthermore, there is no direct relationship between historical disease burdens and the prevalence of infectious diseases in society and corporate misconduct, which satisfies the exogeneity condition. Consequently, to capture this relationship, the first instrumental variable utilized is the index of historical infectious disease prevalence (Murray & Schaller, 2010).

Further, in the US setting, ethnic homogeneity is found to be positively correlated with social capital, as people from similar ethnic categories boost social solidarity and social capital (Putnam, 2007). Putnam (2007) suggested that communities with lower ethnic diversity exhibit higher levels of trust and cooperation. Ethnic fractionalization is a concept that is essentially the opposite of ethnic homogeneity, as it looks at the presence of diverse ethnic groups in a country in a cross-national setting. Following on from the ethnic fractionalization measure that looked at languages spoken in a country as a proxy for cultural similarity (Fearon, 2003), we

use this proxy as the second instrument in a 2SLS regression setting[3]. Moreover, the level of ethnic fractionalization in the country is unlikely to impact firm-level misconduct without impacting the level of trust and social capital. To the best of our knowledge, no prior theoretical or empirical evidence suggested a link between these instruments and corporate corruption, satisfying the exclusion criteria. Furthermore, both these instruments have linkages with social capital, satisfying the relevancy criteria. We expect both these instruments to have a negative coefficient in regressions against social capital (Prosperity Index) as the dependent variable in the first stage regressions.

[Insert Table 8 here]

Table 8 reports the results of the 2SLS regression analysis. We use both instruments individually in specifications 1-4, while specifications 5 and 6 investigate their joint effect. In Table 8, models 1 and 3 present the results for the individual first-stage regressions with Disease Prevalence and Ethnic Fractionalization, respectively. Our sample size reduces to 7,054 firm-year observations, due to data unavailability. Both models show that the instruments are statistically significantly and negatively associated with the Prosperity Index, aligned with prior studies (Hasan et al., 2017; Pasiouras & Samet, 2022; Putnam, 2007). Moreover, the Cragg-Donald F-statistics are 172.276 and 122.533, respectively, which is within the threshold level (Stock & Yogo, 2002), indicating the validity of the instruments. Models 2 and 4 exhibit the findings for the second stage regression considering the instrumented prosperity index as the dependent variable. These results show that the instrumented Prosperity Index is significantly positively associated with total controversies. We further re-run these 2SLS regressions considering both the instruments together in specifications 5 and 6, yielding similar

[3] The original Fearon (2003) ethnic fractionalization proxy accounts for cultural distances between groups, measured as the structural distance between languages spoken by different groups in a country. It was developed and last updated in 2003. We use the updated Quality of Government (QoG) Institute data that imputed the values from 2003 into 2021. The data is collected from - https://datafinder.qog.gu.se/variable/fe_cultdiv

results. These results corroborate our baseline findings, indicating that higher social capital is associated with more significant corruption in developing countries.

Next, we test for sample selection bias in our results. This is particularly important as, in the previous section, we found the effect of social capital is stronger for lower institutional quality countries. Thus, it can be argued that our results suffer from sample selection bias, where the sample demonstrates lower institutional quality, driving the positive association between social capital and corruption. To mitigate these concerns, we employ propensity score matching (PSM) and entropy balancing techniques (EB). PSM works by matching treated and control units with similar propensity scores, which are calculated based on observed covariates. PSM helps create a balanced comparison by matching units with similar propensity scores derived from a control group of firms with relatively low social capital exhibiting no significant differences in observable characteristics compared to the treatment group, indicated by firms with high social capital (measured by social prosperity index in the top quartile) - thereby reducing selection bias.

The Entropy Balance Approach, on the other hand, directly reweights the sample to achieve balance on the covariates by minimizing the differences between the treated and control groups (Yang et al., 2023). This reweighs the data to balance the covariates, including median social capital, between treated and control groups. This method not only ensures covariate balance but also retains more of the original sample size compared to PSM (Hainmueller, 2012; Hossain et al., 2023). By ensuring that the treatment effect is not confounded by the imbalance in social capital, both PSM and EB help produce more robust and reliable estimates of the impact of social capital on corruption, effectively addressing endogeneity concerns.

[Insert Table 9 here]

In PSM control and treatment groups are identified based on the first and fourth quartile dummies of the Prosperity Index. In EB, groups are identified based on higher and lower than median values of the Prosperity Index. This approach controls estimates for high social capital by comparing firms headquartered in high social capital countries to those in low social capital countries with similar propensity scores while keeping other variables constant. We initiate this by determining the probability that a firm is in a high social capital country using a logit regression with the original baseline controls. Then we verify whether the firms in the treatment and control groups are indistinguishable based on observable characteristics. Specifications 1 and 2 in Table 9 Panel A reestimate the logit models for the pre-and post-match samples, demonstrating no distinguishable trends between the two groups. We then examine the difference for each observable characteristic between the treatment and the matched control firms. Table 8 Panel B results further reiterate that there are not many statistically significant differences in the observable characteristics between these two groups. Using the Hainmueller (2012) empirical method, we further examine and report the proof of entropy balancing convergence in Table 9 Panel C. Finally, we present the reestimated baseline model regressions using the PSM and EB matched samples. Table 9 Panel D demonstrates that for both sets of matched samples, the coefficients for the social capital (Propensity Index) are consistently positive and significant at the 1% level. Thus, our baseline findings remain robust even after controlling for potential sample selection bias.

4.7. Robustness Checks

As described in section 3.3, the social capital measure, the Prosperity Index, is an equally weighted index based on five dimensions: Civic and Social Participation, Institutional Trust, Interpersonal Trust, Personal and Family Relationships, and Social Networks. For robustness, we re-estimate our baseline model using the individual dimensions of the Prosperity Index to assess the sensitivity of our primary results. Furthermore, we use an alternative social

capital proxy, based on a principal component analysis (PCA) of all five dimensions to develop a PCA-based Social Capital index. Similar to previous studies (Hasan et al., 2017; Pasiouras & Samet, 2022) and because the eigenvalue value is the highest (2.0383), we consider the first component from the PCA as the alternative social capital proxy.

[Insert Table 10 here]

Table 10 reports the results of the robustness test based on individual dimensions and the PCA proxy of social capital. Specifically, the coefficient of civic and social participation, as well as personal and family relationships, and the PCA-based social capital index, show a significant positive association with corruption. This suggests that higher levels of social capital within close-knit groups, such as family and close social circles, are linked to increased instances of unethical business behavior. In developing countries, social capital tends to be stronger within narrow networks, such as families, relatives, and close social groups (Burt, 2000; Pearson et al., 2008). Within these small, high-trust groups, individuals may feel confident engaging in corruption because the likelihood of being caught is low. This phenomenon illustrates the "dark side" of social capital, where close-knit groups leverage their trust and cohesion to facilitate actions that are detrimental to broader societal norms and regulations.

On the other hand, the results for institutional trust, interpersonal trust, and social networks show a significant negative association with corruption. Supporting the bright side of social capital, the finding implies that higher levels of trust in institutions, trust in strangers, and participation in broader social networks are linked to low levels of unethical business behavior. In larger social groups and interactions with strangers, the level of trust is not as high, making it more challenging to engage in corruption without being noticed (Brass et al., 1998). In these broader contexts, there is a high risk of exposure and accountability, which discourages

unethical behavior. Institutional trust, which involves confidence in the fairness and effectiveness of societal rules and organizations, also plays a crucial role in mitigating corruption. When individuals trust institutions, they are more likely to adhere to ethical standards and less likely to engage in behavior that could undermine these institutions (Jackson et al., 2012).

Furthermore, the alternative PCA-based social capital measure remains positive and statistically significant. The result demonstrates that, compared to the bright side, the dark side components of social capital explain more of the variations in the data when capturing its effect on corruption. The positive and significant results of the PCA-based index also show the robustness of our original baseline findings.

In addition, we consider alternative proxies for corruption. Consistent with Banerjee et al. (2022), we construct two proxies: a corruption dummy and a repeat corruption dummy. The corruption dummy is constructed based on whether a firm was under the media spotlight due to corruption-related issues such as bribes, money laundering, tax misappropriations, and political payments, using the original Refinitiv data. It takes the value of 1 if the sample firm was under the media spotlight for these issues, and 0 otherwise. Since the dataset considers multiple sources such as annual reports, stock market filings, conference call scripts, media articles, and others, it is less likely to be biased by political influences. Additionally, the repeat corruption dummy is another alternative proxy, taking the value of 1 if the sample firm appears under the media spotlight two or more times in the Refinitiv database. As the dependent variables in these instances are dummy variables, we utilize Probit regressions and rerun our baseline model with all the fixed effects and control variables.

[Insert Table 11 here]

As the results in Table 11 demonstrate, the Prosperity Index is positively associated with both the corruption and repeat corruption dummy, at the 1% and 10% levels, respectively. The pseudo-R-squared values are 22.68% and 28.07%, respectively, demonstrating significant explanatory power of these specifications. The coefficient value for the corruption dummy in Specification 1 is higher than that for the repeat corruption dummy in Specification 2. Therefore, while social capital in developing countries encourages unethical business practice, firms do lose market reputation after appearing under the media spotlight more than once. As a result, the positive effect of social capital weakens, as it downplays the positive effect for repeat unethical practice. These findings highlight the significance of these alternative proxies and provide further robustness to our primary hypothesis of the study.

5. Conclusion

The paper connects two separate strands of literature: one deals with the effect of corporate corruption on firm performance, and the other explores the role of social capital in corporate outcomes. The increasing number of companies engaging in unethical behavior raises questions about whether these actions are punished or rewarded by the community. While the 'greasing the wheel' argument suggests that corporate misconduct can help businesses operate more smoothly and achieve their objectives, leading to better results, the 'sanding the wheel' argument provides evidence that such misconduct harms a firm's future prospects and the overall performance of the economy. This effect is particularly pronounced in developing countries, where the influence of lobbying and bribery is more significant at an institutional level (Clarke & Xu, 2004). This study offers a fresh perspective on the relationship between social capital and corporate unethical behaviors in developing countries.

While previous literature has examined corruption within a single country or specific types of corporate failures (Hasan, He, et al., 2020; Hasan et al., 2017), cross-country evidence,

particularly from a developing countries' perspective at the firm level, remains largely unexplored. To address this gap, we utilize comprehensive data on corporate corruption at the firm level from 20 developing countries in the period 2007 to 2021 and consider a broader range of corporate failures, including issues related to business ethics, media controversies regarding tax fraud, anti-competition practices, public health, and critical incidents. Moreover, social capital can act as a double-edged sword, influencing corporate behaviors in opposing directions. Culture and social norms play a crucial role in determining whether these connections are beneficial or detrimental. We find that the dark side of social capital is more prevalent in developing countries, making them more prone to engaging in corruption (Pena López & Sánchez Santos, 2014).

Furthermore, we examine whether the impact of social capital is conditioned by periods of high economic uncertainty, global uncertainty, and geopolitical risk. We find that the positive effect of social capital is stronger during periods of economic uncertainties and risks. This finding suggests that during times of uncertainty, close-knit connections, parochialism, groupthink, and inertia are more prevalent, potentially leading to corruption in firms (Pillai et al., 2017). We also explore whether certain firm-level factors exacerbate the effect of social capital on corruption and find that industry competition, firm innovativeness, and cash holdings significantly influence this relationship.

Another important aspect of our analysis is examining the moderating roles of institutional quality and altruistic culture in defining the impact of social capital on corporate misconduct. We find that this impact is stronger in countries with lower institutional quality levels than those with higher levels. These results underscore the dark side of social capital, where poor institutional quality fails to mitigate the positive effect of social capital on corporate corruption. Conversely, countries with strong property laws and governance experience higher levels of social and civic norms, reaping the benefits of social capital (Knack & Keefer, 1997).

Additionally, we find that the positive effect of social capital on corrupt practices is stronger in more altruistic societies. This suggests that excessive trust reduces the need for additional monitoring, leading to blind faith and fewer checks on unethical behaviors that firms may exploit (Gargiulo & Ertug, 2006).

Finally, we investigate whether the effect is moderated by the degree of the firm's internationalization based on the location of its headquarters. We find that the positive effect of social capital diminishes as firms become more internationalized. Higher levels of internationalization expose firms to diverse cultures and community norms outside their home region, which reduces the influence of the dark side of social capital on corruption. Our results remain robust after controlling endogeneity, selection bias, alternative measures of unethical behaviors, and social capital estimates. However, as one of the potential limitations of the study, we are mindful that the estimates are based on reported corruption and not on actual business practices data. Corporate corruption is extremely hard to capture unless it gets reported. Thus, our coefficients of social capital are biased downwards and possibly have a higher positive effect on corruption.

Our findings have several important policy implications for firms and regulators operating in developing countries. First, contrary to the previous studies that provide evidence that social capital helps to cultivate a social environment where corporations thrive and benefit the economy (Hasan et al., 2017), we show that social capital can lead to more corruption and can be harmful to some societies if remains undetected. This is mainly driven by cultural norms in those societies where corruption is perceived as typical and individuals engaged in such practices are not aware of such wrongdoings (Adaman & Odabaş, 2014). Therefore, the dark side of social capital, particularly the cultural norms and close-knit groups, is prominent in developing countries, which could drive unethical behaviors in firms. Moreover, when considering the various dimensions of social capital, we find that civic and social participation,

as well as personal and family relationships, show a significant positive association with corruption, suggesting that higher levels of social capital within close-knit groups, such as family and close social circles, are linked to increased instances of unethical business behavior. In contrast, institutional trust, interpersonal trust, and social networks, which capture a more holistic view of society, show a significant negative association with corruption. This is an important finding showing the mechanism of how the dark side of social capital influences corruption in developing countries.

Second, from a policy perspective, during periods of uncertainty and risk, the chances of corruption may increase due to a stronger effect of the dark side of social capital where a culture of impunity may emerge, leading to close-knit community transactions, groupthink, and lobbying. This can limit authorities' ability to take action and the extent to which bad behaviors are punished in those cultures (Pena López & Sánchez Santos, 2014). Third, although the positive effect of social capital on corruption is visible for both high and low levels of institutional quality, the effect is stronger for low levels of institutional quality and more altruistic cultures. Therefore, regulators need to be extra mindful of inspecting firm-level business practices if the host country exhibits a low level of institutional quality and a high degree of altruistic trust. Collectively, these findings suggest that social capital can harm corporate performance in developing countries, particularly for shareholders, if we ignore the importance of cultural norms in the regions and the role of formal institutions in mitigating those effects.

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Table 1: Sample description

Panel A: Annual distribution

Year	# Firm-year observation	Percent	Average Prosperity Index	Average Controversies
2007	41	0.33	56.21	0.10
2008	165	1.33	58.12	0.08
2009	246	1.98	58.43	0.07
2010	438	3.52	58.90	0.08
2011	500	4.02	59.34	0.09
2012	554	4.45	60.31	0.06
2013	588	4.72	60.34	0.12
2014	632	5.08	60.70	0.09
2015	669	5.37	60.80	0.08
2016	747	6.00	60.53	0.10
2017	972	7.81	60.52	0.07
2018	1,113	8.94	60.68	0.07
2019	1,519	12.2	61.31	0.05
2020	1,844	14.81	61.57	0.05
2021	2,424	19.47	61.59	0.03

Panel B: Country-wise distribution

Country Code	# Firm-year observation	Percent	Average Prosperity Index	Average Controversies
ARG	197	1.58	60.71	0.01
BRA	972	7.81	60.06	0.10
CHL	363	2.92	68.89	0.04
CHN	3,289	26.41	61.24	0.03
COL	160	1.28	57.39	0.03
EGY	129	1.04	47.46	0.00
IDN	493	3.96	58.84	0.01
IND	1,381	11.09	51.51	0.19
KWT	109	0.88	61.06	0.02
MEX	455	3.65	58.80	0.09
MYS	899	7.22	66.12	0.03
PER	177	1.42	60.65	0.01
PHL	283	2.27	55.97	0.02
POL	365	2.93	69.54	0.03
QAT	189	1.52	65.93	0.00
RUS	464	3.73	56.74	0.14
SAU	257	2.06	51.27	0.03
THA	666	5.35	60.20	0.02
TUR	521	4.18	56.78	0.05
ZAF	1,083	8.7	72.52	0.07

Note: This table shows the distribution of the sample for this study, by year and country level.

Table 2: Summary statistics

Variable	Obs	Mean	SD	0.25	Median	0.75
Total Controversies	11,415	0.11	0.65	0.00	0.00	2.00
Prosperity Index	11,415	60.87	5.88	57.78	60.56	62.51
Ln (Age)	11,415	3.24	0.74	2.83	3.22	3.74
Firm Size (Ln (Total Assets))	11,415	15.45	1.62	14.32	15.38	16.54
Dividend Dummy	11,415	0.88	0.33	1.00	1.00	1.00
Leverage	11,415	25.78	17.77	10.70	24.86	37.73
Tobin's Q	11,415	1.49	1.29	0.65	1.01	1.82
Closely Held Shares	11,415	49.72	23.39	35.17	53.75	67.87
Market to Book Value Ratio	11,415	2.70	2.57	0.98	1.72	3.34
Inflation	11,415	3.49	2.02	2.07	3.20	5.13
Ln (GDP Per Capita)	11,415	8.93	0.61	8.74	9.14	9.32

Note: This table reports the descriptive statistics of the major variables used in this study.

Table 3: Baseline results

Dependent Variable: Total Controversies	(1)	(2)	(3)	(4)	(5)	(6)
Prosperity Index	0.0042***	0.0062***	0.0024**	0.0055***	0.0493***	0.0860***
	(0.0004)	(0.0007)	(0.0012)	(0.0013)	(0.0118)	(0.0137)
Ln (Age)		0.0189**	-0.0094		-0.0072**	-0.0070*
		(0.0082)	(0.0083)		(0.0036)	(0.0037)
Firm Size		0.0783***	0.0901***		0.0381***	0.0390***
		(0.0074)	(0.0078)		(0.0022)	(0.0023)
Dividend Dummy		-0.0670**	-0.0528*		-0.0088	-0.0056
		(0.0284)	(0.0292)		(0.0070)	(0.0073)
Leverage		-0.0004	-0.0004		-0.0004***	-0.0003**
		(0.0004)	(0.0004)		(0.0001)	(0.0001)
Tobin's Q		0.0042	0.0042		-0.0008	0.0015
		(0.0026)	(0.0027)		(0.0040)	(0.0041)
Closely Held Shares		-0.0011***	-0.0001***		-0.0001	-0.0001
		(0.0003)	(0.0003)		(0.0001)	(0.0001)
Market to Book Value		0.0001	-0.0003		0.0014	0.0007
		(0.0001)	(0.0001)		(0.0018)	(0.0019)
Inflation			0.0301***			-0.0021
			(0.0040)			(0.0021)
Ln (GDP Per Capita)			-0.0973***			-0.0777***
			(0.0144)			(0.0166)
Constant	-0.3162***	-0.6663***	-0.5367***	-0.4001***	-0.4948***	0.1774***
	(0.0288)	(0.1389)	(0.2091)	(0.0803)	(0.0353)	(0.0015)
Observations	11,415	11,415	11,415	11,415	11,415	11,415
R-squared	0.0576	0.0760	0.0834	0.0981	0.1350	0.1377
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	NO	NO	NO	YES	YES	YES

Note: This table presents the results for the baseline regression model. The dependent variable is the continuous corruption measure – Total Controversies, and the primary independent variable is the prosperity index. Columns (1) and (4) present the results for the bivariate model, Columns (2) and (5) present the results for the multivariate model with firm-level control variables, and Columns (3) and (6) present the results for the multivariate regression with firm and country-level control variables. Year and industry fixed effects are controlled in Columns (1), (2), and (3), whereas year, industry, and country fixed effects are controlled in Columns (4), (5), and (6). Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 4: Effect of Economic Uncertainty

Dependent Variable: Total Controversies	(1)	(2)	(3)
GPR dummy * Prosperity	0.0156***		
	(0.0037)		
GPR dummy	0.9114***		
	(0.2256)		
EPU dummy * Prosperity		0.0148***	
		(0.0039)	
EPU dummy		0.8951***	
		(0.2441)	
WUI dummy * Prosperity			0.0019**
			(0.0010)
WUI dummy			-0.0991
			(0.0653)
Prosperity Index	0.0009*	0.0009*	-0.0008
	(0.0005)	(0.0005)	(0.0007)
Ln (Age)	-0.0049	-0.0032	-0.0031
	(0.0034)	(0.0034)	(0.0034)
Firm Size	0.0409***	0.0396***	0.0388***
	(0.0021)	(0.0021)	(0.0021)
Dividend Dummy	-0.0093	-0.0108	-0.0125*
	(0.0071)	(0.0071)	(0.0070)
Leverage	-0.0002*	-0.0002*	-0.0002
	(0.0001)	(0.0001)	(0.0001)
Tobin's Q	0.0042	0.0025	0.0018
	(0.0040)	(0.0040)	(0.0039)
Closely Held Shares	-0.0003***	-0.0003***	-0.0003**
	(0.0001)	(0.0001)	(0.0001)
Market to Book Value	0.0010	0.0012	0.0012
	(0.0019)	(0.0019)	(0.0019)
Inflation	0.0113***	0.0118***	0.0089***
	(0.0013)	(0.0013)	(0.0014)
Ln (GDP Per Capita)	-0.0510***	-0.0526***	-0.0503***
	(0.0056)	(0.0056)	(0.0057)
Constant	-0.1653***	-0.1407**	-0.0401
	(0.0627)	(0.0631)	(0.0608)
Observations	11,415	11,415	11,415
R-squared	0.1141	0.1116	0.1109
Year FE	YES	YES	YES
Country FE	YES	YES	YES
Industry FE	YES	YES	YES

Note: This table presents the results for the economic uncertainty factors channel analysis. Columns (1) and (2) present the results geopolitical risk, Columns (3) and (4) present the results for economic policy uncertainty, and Columns (5) and (6) present the results for world uncertainty. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 5: Effect of Firm-level factors

Dependent Variable: Total Controversies	(1)	(2)	(3)
HHI dummy * Prosperity	0.0028***		
	(0.0009)		
HHI dummy	-0.1529***		
	(0.0540)		
Cash Holding dummy * Prosperity		0.0028***	
		(0.0010)	
Cash Holding dummy		-0.1689***	
		(0.0607)	
R&D dummy * Prosperity			0.0020*
			(0.0011)
R&D Dummy			-0.1112*
			(0.0669)
Prosperity Index	0.0026	0.0039**	0.0051**
	(0.0020)	(0.0020)	(0.0020)
Ln (Age)	-0.0036	-0.0038	-0.0030
	(0.0035)	(0.0035)	(0.0036)
Firm Size	0.0385***	0.0381***	0.0370***
	(0.0020)	(0.0020)	(0.0021)
Dividend Dummy	-0.0055	-0.0060	-0.0049
	(0.0074)	(0.0074)	(0.0074)
Leverage	-0.0003**	-0.0004**	-0.0003**
	(0.0001)	(0.0001)	(0.0001)
Tobin's Q	0.0008	0.0010	0.0003
	(0.0039)	(0.0040)	(0.0039)
Closely Held Shares	-0.0001	-0.0001	-0.0001
	(0.0001)	(0.0001)	(0.0001)
Market to Book Value	0.0010	0.0006	0.0004
	(0.0017)	(0.0017)	(0.0017)
Inflation	-0.0014	-0.0013	-0.0014
	(0.0021)	(0.0021)	(0.0012)
Ln (GDP Per Capita)	-0.0861***	-0.0904***	-0.1073***
	(0.0190)	(0.0190)	(0.0195)
Constant	0.1020	0.0757	0.1685
	(0.1262)	(0.1260)	(0.1289)
Observations	11,415	11,415	11,415
R-squared	0.1318	0.1373	0.1321
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Country FE	YES	YES	YES

Note: This table presents the results for the firm-level factors channel analysis. Columns (1) and (2) present the results market competition, Columns (3) and (4) present the results for cash holding, and Columns (5) and (6) present the results for R&D. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 6: Subsample Analysis – Effect of Institutional Quality and Altruistic Culture

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Rule of Law		Control of Corruption		Government Effectiveness		Altruism	
Dependent Variable: Total Controversies	Above Median	Below Median	Above Median	Below Median	Above Median	Below Median	Above Median	Below Median
Prosperity	-0.0268**	0.0042	-0.0269**	0.0305*	-0.0431***	0.0027*	0.0047**	-0.0493***
	(0.0115)	(0.0037)	0.0136	(0.0171)	(0.0125)	(0.0012)	(0.0019)	(0.0176)
Ln (Age)	-0.0093	0.0171	-0.0181**	-0.0274*	-0.0066	-0.0297**	-0.0163	-0.0173
	(0.0179)	(0.0261)	(0.0092)	(0.0160)	(0.0089)	(0.0127)	(0.0128)	(0.0160)
Size	0.1457**	0.1424**	0.0496***	0.1678***	0.0412***	0.1584***	0.1075***	0.1156***
	(0.0567)	(0.0514)	(0.0064)	(0.0192)	(0.0060)	(0.0161)	(0.0173)	(0.0099)
Dividend Dummy	-0.0832*	-0.0974**	-0.0217	-0.0793	-0.0610**	-0.0496	-0.0389	-0.0495
	(0.0414)	(0.0425)	(0.0187)	(0.0644)	(0.0293)	(0.0504)	(0.0490)	(0.0367)
Leverage	-0.0011	-0.0008	-0.0008**	-0.0009	-0.0005	-0.0007	0.0008	-0.0022***
	(0.0009)	(0.0011)	(0.0003)	(0.0007)	(0.0003)	(0.0006)	(0.0006)	(0.0004)
Tobin's Q	0.0175	0.0096	0.0113	0.0199	0.0114	0.0119	0.0170	0.0214*
	(0.0164)	(0.0133)	(0.0093)	(0.0174)	(0.0092)	(0.0159)	(0.0161)	(0.0115)
Closely Held Shares	-0.0011*	-0.0018**	-0.0002	-0.0009*	-0.0002	-0.0015***	-0.0011***	-0.0009***
	(0.0006)	(0.0008)	(0.0003)	(0.0005)	(0.0002)	(0.0005)	(0.0004)	(0.0004)
Market to Book Value	0.0026	0.0076	-0.0043	0.0001	-0.0049	0.0036	0.0063	-0.0052
	(0.0061)	(0.0053)	(0.0039)	(0.0062)	(0.0039)	(0.0055)	(0.0057)	(0.0048)
Inflation	-0.0209**	0.0328*	-0.0088	-0.0077	0.0043	0.0260***	0.0230***	-0.0123
	(0.0074)	(0.0172)	(0.0060)	(0.0122)	(0.0057)	(0.0061)	(0.0050)	(0.0123)
Ln (GDP Per Capita)	-0.0264	-0.0186	-0.1583	0.0494	-0.0432	-0.0684***	-0.0056	0.0553
	(0.0968)	(0.0461)	(0.1070)	(0.1048)	(0.0713)	(0.0228)	(0.0163)	(0.0793)

Constant	-0.0681	-2.1800*	2.6085***	-0.8675	2.6141***	-1.7356***	-1.7823***	0.9498
	(1.0656)	(1.0412)	(0.9050)	(1.2834)	(0.8630)	(0.3945)	(0.3051)	(0.9915)
Observations	5,696	5,696	5,834	5,581	5,589	5,826	5,613	5,802
R-squared	0.1567	0.0982	0.0943	0.1209	0.1165	0.1096	0.1165	0.1627
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Statistical Difference	Chi2	p-value	Chi2	p-value	Chi2	p-value	Chi2	p-value
	4.12	0.076	4.33	0.056	3.25	0.021	5.25	0.032

Note: This table presents the results for the second hypothesis regarding institutional quality channel analysis. Columns 1, 2 and 3 present the results for Rule of law, ICRG, and Corruption dummies, respectively. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 7: Impact of Firm Internationalization

Dependent Variable: Total Controversies	(1) Full Sample	(2) Foreign Sales (Top Quartile/Q4)	(3) Foreign Sales (Q3)	(4) Foreign Sales (Q2)	(5) Foreign Sales (Bottom Quartile/Q1)
Foreign Sales dummy * Prosperity	-0.0082***				
	(0.0019)				
Foreign Sales	0.5533***				
	(0.1218)				
Prosperity Index	0.0096**	-0.0074**	-0.0036	0.0014	0.0060**
	(0.0048)	(0.0032)	(0.0042)	(0.0036)	(0.0025)
Ln (Age)	-0.0126	-0.0134	0.0470	-0.0159	-0.0291
	(0.0093)	(0.0105)	(0.0289)	(0.0268)	(0.0242)
Firm Size	0.0885***	0.0333***	0.0381***	0.1360***	0.1645***
	(0.0084)	(0.0063)	(0.0115)	(0.0333)	(0.0223)
Dividend Dummy	-0.0387	-0.0031	0.0192	-0.2382	0.0337
	(0.0313)	(0.0225)	(0.0352)	(0.1590)	(0.0353)
Leverage	-0.0007**	-0.0004	0.0006	-0.0002	-0.0011
	(0.0003)	(0.0004)	(0.0009)	(0.0009)	(0.0013)
Tobin’s Q	0.0049	-0.0252**	0.0001	0.0556**	-0.0074
	(0.0093)	(0.0107)	(0.0154)	(0.0271)	(0.0238)
Closely Held Shares	-0.0004	0.0005	0.0002	-0.0008	-0.0018**
	(0.0003)	(0.0003)	(0.0004)	(0.0008)	(0.0006)
Market to Book Value	-0.0012	0.0092*	0.0060	-0.0096	0.0005
	(0.0036)	(0.0050)	(0.0083)	(0.0071)	(0.0124)
Inflation	-0.0023	0.0007	0.0266**	0.0511***	0.0412***
	(0.0063)	(0.0054)	(0.0130)	(0.0182)	(0.0084)

Ln (GDP Per Capita)	-0.1381**	-0.0476	-0.0575	-0.1942***	-0.1259***
	(0.0557)	(0.0396)	(0.0546)	(0.0515)	(0.0342)
Constant	-0.5260	0.4823*	-0.0733	-0.2184	-1.5350***
	(0.3407)	(0.2473)	(0.4526)	(0.9223)	(0.3993)
Observations	11,415	2,595	2,575	2,504	3,741
R-squared	0.1076	0.1243	0.1492	0.1171	0.0877
Year FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES

Note: This table presents the results for the robustness test considering the degree of firm internationalization. In all models, the total controversy is the dependent variable. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 8: 2SLS using Instrumental Variables

Dependent Variables	(1) Prosperity Index	(2) Total Controversies	(3) Prosperity Index	(4) Total Controversies	(5) Prosperity Index	(6) Total Controversies
Disease Prevalence	-9.4263***				-9.1352***	
	(0.1312)				(0.1183)	
Ethnic Fractionalization			-8.9063***		-7.4860***	
			(0.4121)		(0.2503)	
Instrumented Prosperity Index		0.0099***		0.0053**		0.0064**
		(0.0029)		(0.0025)		(0.0027)
Ln (Age)	0.2696***	-0.0017	0.0801	-0.0043	0.1601***	-0.0023
	(0.0650)	(0.0109)	(0.0781)	(0.0108)	(0.0604)	(0.0108)
Size	-0.8013***	0.0878***	-1.0893***	0.1071***	-0.6965***	0.0924***
	(0.0514)	(0.0088)	(0.0586)	(0.0113)	(0.0514)	(0.0091)
Dividend Dummy	1.2099***	-0.0576	1.1355***	-0.0775**	1.1404***	-0.0623*
	(0.1609)	(0.0364)	(0.1961)	(0.0374)	(0.1576)	(0.0365)
Leverage	-0.0037	0.0009*	-0.0271***	0.0013**	-0.0005	0.0010**
	(0.0031)	(0.0005)	(0.0036)	(0.0005)	(0.0029)	(0.0005)
Tobin's Q	-0.7989***	0.0207*	-1.3206***	0.0439***	-0.8031***	0.0262**
	(0.0778)	(0.0123)	(0.0935)	(0.0139)	(0.0730)	(0.0124)
Closely Held Shares	-0.0214***	-0.0012***	-0.0217***	-0.0006	-0.0139***	-0.0010***
	(0.0024)	(0.0004)	(0.0028)	(0.0004)	(0.0022)	(0.0004)
Market to Book Value	0.1739***	-0.0060	0.1921***	-0.0095*	0.1783***	-0.0068
	(0.0314)	(0.0051)	(0.0398)	(0.0052)	(0.0286)	(0.0051)
Inflation	0.4471***	0.0229***	-0.2097***	0.0211***	0.1362***	0.0225***

	(0.0291)	(0.0049)	(0.0380)	(0.0048)	(0.0316)	(0.0049)
Ln (GDP Per Capita)	3.7480***	-0.0198	6.7312***	-0.1111***	4.5430***	-0.0415
	(0.1012)	(0.0289)	(0.1213)	(0.0240)	(0.1106)	(0.0277)
Constant	44.5346***	-0.4204*	17.2331***	-0.8907***	32.6535***	-0.5321**
	(1.7565)	(0.2243)	(2.1345)	(0.2772)	(1.8992)	(0.2293)
Observations	7,054	7,054	7,054	7,054	7,054	7,054
R-squared	0.7036	0.0472	0.5758	0.0532	0.7293	0.0506
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Cragg-Donald F-statistic	172.276		122.533		136.841	
Sargan statistic	324.026	P<0.001	330.689	P<0.001	345.347	P<0.001

Note: This table presents the result for first stage and second stage results of the instrumental variable regression using 2SLS regression. We use Disease Prevalence and Ethnic Fractionalization as instruments individually in Models 1-4 and jointly in models 5 and 6. Cragg-Donald = Cragg-Donald Wald F statistic, and Sargan = Sargan statistic for overidentification test of all instruments p-value. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 9: Propensity Score Matching and Entropy Balancing

Panel A: Pre- and Post-match Propensity Score Regressions

Dependent Variable: Top Quartile Prosperity Index Dummy	(1) Pre-match	(2) Post-match
Ln (Age)	0.1770***	0.0192
	(0.0228)	(0.0267)
Firm Size	-0.4195***	-0.1797***
	(0.0144)	(0.0170)
Dividend Dummy	0.0299	0.0836
	(0.0506)	(0.0554)
Leverage	-0.0075***	-0.0002
	(0.0010)	(0.0013)
Tobin's Q	-0.3627***	0.0183
	(0.0180)	(0.0354)
Closely Held Shares	-0.0091***	0.0009
	(0.0007)	(0.0008)
Market to Book Value	0.0187	-0.0610***
	(0.0133)	(0.0150)
Inflation	-0.0792***	-0.1083***
	(0.0092)	(0.0115)
Ln (GDP Per Capita)	1.2537***	-0.0745
	(0.0447)	(0.0651)
Constant	-3.4670***	5.4096***
	(0.6981)	(1.1030)
Observations	11,040	5,520
Pseudo R-squared	0.3324	0.1730
Year FE	YES	YES
Industry FE	YES	YES
Country FE	YES	YES

Panel B: Post-match Diagnostic Test

Variable	Treated	Control	Difference	T-statistics
Total Controversies	0.071	0.0522	0.0188*	1.79
Ln (Age)	3.2856	3.2777	0.0079	0.38
Firm Size	14.968	15.015	-0.047	-2.1
Dividend Dummy	0.8431	0.8435	-0.0004	-0.04
Leverage	23.394	23.554	-0.16	-0.36
Tobin's Q	1.2006	1.2812	-0.0806	-2.92
Closely Held Shares	43.435	42.4621	0.9729	1.43
Market to Book Value	2.1869	2.4222	-0.2353	-3.9
Inflation	3.2248	3.2547	-0.0299*	-0.57
Ln (GDP Per Capita)	9.2101	9.2367	-0.0266*	-3.11

Panel C: Entropy Balancing Diagnostics Test – Proof of Convergence

Before Balancing						
	Treatment			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness
Ln (Age)	3.2162	0.4722	-0.3043	3.2721	0.5592	-0.2787
Firm Size	15.1601	2.5182	0.1971	15.7402	2.3761	-0.0436
Dividend Dummy	0.8942	0.0946	-2.5631	0.8832	0.1032	-2.3862
Leverage	24.4801	290.2013	0.4062	27.3202	333.9241	0.2665
Tobin's Q	1.5261	1.7872	1.5182	1.4902	1.6032	1.6022
Closely Held Shares	47.1211	566.5212	-0.4954	52.6513	485.1011	-0.7522
Market to Book Value	2.7021	7.0152	1.6271	2.7514	6.2752	1.6872
Inflation	2.7382	3.2381	0.5019	4.1391	3.8761	-0.1748
Ln (GDP Per Capita)	9.2231	0.0915	-0.7027	8.6113	0.4829	-0.3502
After Balancing						
	Treatment			Control		
	Mean	Variance	Skewness	Mean	Variance	Skewness
Ln (Age)	3.2162	0.4722	-0.3043	3.2162	0.4487	0.0115
Firm Size	15.1601	2.5182	0.1971	15.1601	2.5271	0.1112
Dividend Dummy	0.8942	0.0946	-2.5631	0.8942	0.0946	-2.5631
Leverage	24.4801	290.2013	0.4062	24.4801	314.3012	0.3463
Tobin's Q	1.5261	1.7872	1.5182	1.5261	1.3512	1.4902
Closely Held Shares	47.1211	566.5212	-0.4954	47.1211	549.0212	-0.4573
Market to Book Value	2.7021	7.0152	1.6271	2.7021	5.1762	1.7552
Inflation	2.7382	3.2381	0.5019	2.7382	3.7142	0.4811
Ln (GDP Per Capita)	9.2231	0.0915	-0.7027	9.2231	0.1508	-0.7787

Panel D: Post-match Propensity Score and Entropy Balanced Sample Regression Results

Dependent Variable: Total Controversies	(1) PSM	(2) EB
Prosperity Index	0.0175***	0.0125***
	(0.0043)	(0.0044)
Ln (Age)	-0.0294***	-0.0116
	(0.0104)	(0.0080)
Size	0.0564***	0.0597***
	(0.0069)	(0.0044)
Dividend Dummy	-0.0197	-0.0567***
	(0.0125)	(0.0166)
Leverage	-0.0006*	-0.0003
	(0.0004)	(0.0003)
Tobin's Q	-0.0022	0.0027
	(0.0091)	(0.0086)
Closely Held Shares	-0.0001	-0.0003
	(0.0003)	(0.0002)
Market to Book Value	0.0054	0.0022
	(0.0043)	(0.0040)
Inflation	0.0067	0.0011
	(0.0045)	(0.0044)
Ln (GDP Per Capita)	-0.2276***	-0.1720***
	(0.0682)	(0.0512)
Constant	0.3304	0.0766
	(0.4551)	(0.3551)
Observations	5,520	11,415
R-squared	0.0735	0.0591
Year FE	YES	YES
Industry FE	YES	YES
Country FE	YES	YES

Note: This table presents the results for controlling sample selection bias by PSM and EB. In the PSM models, treatment (control) groups are identified based on the fourth (first) quartile dummies of the prosperity index. In EB model, groups are identified based on values of the prosperity index that are higher or lower than the median. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 10: Individual Social Capital Dimensions

Dependent Variable: Total Controversies	(1)	(2)	(3)	(4)	(5)	(6)
Civic and Social Participation	0.0009***					
	(0.0003)					
Institutional Trust		-0.0061***				
		(0.0009)				
Interpersonal Trust			-0.0015*			
			(0.0008)			
Personal and Family Relationship				0.0023*		
				(0.0012)		
Social Networks					-0.0019***	
					(0.0001)	
Social Capital PCA						0.0126***
						(0.0025)
Ln (Age)	-0.0127	-0.0192**	-0.0143	-0.0135	-0.0120	-0.0026
	(0.0087)	(0.0095)	(0.0096)	(0.0095)	(0.0095)	(0.0036)
Size	0.0962***	0.0958***	0.0920***	0.0918***	0.0909***	0.0379***
	(0.0087)	(0.0086)	(0.0084)	(0.0085)	(0.0084)	(0.0022)
Dividend Dummy	-0.0004	-0.0008**	-0.0007**	-0.0007**	-0.0007**	-0.0046
	(0.0004)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0076)
Leverage	-0.0500*	-0.0444	-0.0387	-0.0403	-0.0404	-0.0003**
	(0.0295)	(0.0315)	(0.0319)	(0.0315)	(0.0315)	(0.0002)
Tobin's Q	0.0071	0.0109	0.0072	0.0070	0.0058	-0.0008
	(0.0090)	(0.0091)	(0.0090)	(0.0092)	(0.0091)	(0.0039)
Closely Held Shares	-0.0010***	-0.0005*	-0.0004	-0.0004	-0.0004	-0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0001)

Market to Book Value	0.0007	-0.0018	-0.0018	-0.0020	-0.0018	0.0010
	(0.0035)	(0.0036)	(0.0036)	(0.0036)	(0.0036)	(0.0017)
Inflation	0.0303***	-0.0072	-0.0015	-0.0029	-0.0017	-0.0005
	(0.0042)	(0.0064)	(0.0062)	(0.0065)	(0.0061)	(0.0021)
Ln (GDP Per Capita)	-0.0731***	-0.1734***	-0.1234***	-0.1311***	-0.1097***	-0.0551***
	(0.0159)	(0.0412)	(0.0398)	(0.0401)	(0.0372)	(0.0148)
Constant	-0.7189***	0.6899*	-0.0208	-0.1697	-0.1340	-0.0031
	(0.2414)	(0.3844)	(0.3770)	(0.3304)	(0.3375)	(0.1363)
Observations	11,415	11,415	11,415	11,415	11,415	11,415
R-squared	0.0873	0.1080	0.1054	0.1053	0.1052	0.1313
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES

Note: This table presents the results for robustness test. In all models, the total controversy is the dependent variable. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Table 11: Alternative Proxies for Firm Corruption

Dependent Variables	(1) Corruption Dummy	(2) Repeat Corruption Dummy
Prosperity	0.0151***	0.0095*
	(0.0050)	(0.0067)
Ln (Age)	-0.0464	-0.0383
	(0.0333)	(0.0458)
Size	0.4574***	0.5603***
	(0.0255)	(0.0368)
Dividend Dummy	-0.1202	-0.2044**
	(0.0773)	(0.1032)
Leverage	-0.0010	-0.0034
	(0.0016)	(0.0021)
Tobin's Q	0.0177	0.0716
	(0.0396)	(0.0540)
Closely Held Shares	-0.0033***	-0.0032***
	(0.0010)	(0.0012)
Market to Book Value	0.0355**	0.0161
	(0.0173)	(0.0239)
Inflation	0.1173***	0.1298***
	(0.0135)	(0.0166)
Ln (GDP Per Capita)	-0.4960***	-0.5876***
	(0.0453)	(0.0573)
Constant	-6.2994***	-5.9753***
	(0.7889)	(0.7790)
Observations	11,415	11,415
Pseudo R-squared	0.2268	0.2807
Log pseudolikelihood	-2023.1527	-1145.9960
Year FE	YES	YES
Industry FE	YES	YES
Country FE	YES	YES

Note: This table presents the results for robustness test using alternative proxies for firm-level corruption. Year, industry, and country fixed effects are controlled in all models. Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, and * p<0.1 indicate p-value significance levels. All variables are described in Appendix A.

Appendix A: Variable Definitions

Variables	Definition	Source
Total Controversies	Sum of the number of the times a firm was in the media relating to controversies in public health, business ethics, tax fraud, anti-competition and critical countries.	LSEG Refintiv Workspace
Ln (Age)	Natural logarithm of firm age	As above
Firm Size	Natural log of firm total assets	As above
Dividend Dummy	A dummy variable taking the value equal to one if the firm pays cash dividend	As above
Leverage	Total short-term and long-term debt divided by total assets	As above
Tobin's Q	Sum of total assets less the book value of equity plus the market value of equity, divided by total assets	As above
Closely Held Shares	Percentage of shares closely held	As above
Market to Book Value	Sum of total debt and market capitalization scaled by total assets	As above
R&D Intensity	R&D expenses to total assets, missing R&D replaced by 0	As above
Cash holding	Cash and short-term investments divided by total assets	As above
Degree of Internationalization	Foreign sales to total sales	As above
Inflation	The annualized yearly median of a country-specific one-year-ahead realized monthly inflation rate.	World Bank
Ln (GDP Per Capita)	Logarithm of GDP per capita	As above
Rule of Law	Time-varying 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.	As above
Corruption Control	Time-varying perceptions of the degree 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.	As above
Government Effectiveness	Government effectiveness captures 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.	As above
Altruism	Composite score considering cross-national data indexing seven forms of altruism including charitable donations, volunteering and everyday helping as indexed by responses to questions from the Charities Aid Foundation.	Rhoads et al. (2021)
Prosperity index	Overall index estimated by the Legatum Institute, considering the five sub-components under an equal weighting approach	Legatum Institute
Civic and Social Participation	The civic and social participation score. It is calculated by the Legatum Institute considering: (i) the percentage of people responding "Yes" to the Gallup survey question: "Have you donated money to a charity in past month?", (ii) A measure of voter turnout (% of registered electors) ∗ democracy score ∗ election occurred in last 7 year, (iii) The percentage of people responding "Yes" to the Gallup survey question: "Have you volunteered time to an organisation	As above

	in past month?", (iv) The percentage of people responding "Yes" to the Gallup survey question: "In the past month, have you voiced your opinion to a public official?"	
Institutional Trust	The institutional trust score. It is calculated by the Legatum Institute considering: (i) The percentage of people responding "Yes" to the Gallup survey question: "Do you have confidence in the local police force?" (ii) The answer to the following question from the Expert's Survey of the World Economic Forum Global Competitiveness Index "In your country, how would you rate the ethical standards of politicians?" (iii) The percentage of people responding "Yes" to the Gallup survey question: "Do you have confidence in financial institutions or banks?" (iv) The percentage of people responding "Yes" to the Gallup survey question: "Do you have confidence in the judicial system and courts?" (v) The percentage of people responding "Yes" to the Galup survey question: "Do you have confidence in national government?" (vi) The percentage of people responding "Yes" to the Gallup survey question: "Do you have confidence in the military?"	As above
Interpersonal Trust	The interpersonal trust score. It is calculated by the Legatum Institute considering: (i)The percentage of people responding "Most people can be trusted" to the question "Generally speaking, would you say most people can be trusted, or you can't be too careful?" in the Integrated Values Survey, Afrobarometer, Arab Barometer, and Latinobarometro, (ii) The percentage of people responding "Yes" to the Gallup survey question: "Have you helped a stranger or someone you didn't know who needed help in past month?"	As above
Personal and Family Relationship	The personal and family relationships score. It is calculated by the Legatum Institute considering: (i) The percentage of people responding "Yes" to the Gallup survey question: "If you were in trouble, do you have relatives or friends you can count on to help?" (ii) The percentage of people responding "Strongly Agree/Agree" to the Gallup survey question: "Thinking about your life in general 'My family give me positive energy'"	As above
Social Networks	The social Networks score. It is calculated by the Legatum Institute considering: (i) The percentage of people responding "Yes" to the Gallup survey question: "Were you treated with respect all day yesterday?" (ii) The percentage of people responding "Yes" to the Gallup survey question: "Are you satisfied with opportunities to meet people and make friends? (iii) The percentage of people responding "Yes" to the Gallup survey question: Has your household sent financial help to another household in last year?" (same country)"	As above
Social Capital PCA	First component of a principal component analysis of the above five social capital dimensions	Author constructed

Appendix B: Correlation Matrix

	Total Controversies	Prosperity Index	Ln (Age)	Firm Size	Dividend Dummy	Leverage	Tobin's Q	Closely Held Shares	Market to Book Value	Inflation	Ln (GDP Per Capita)
Total Controversies	1.00										
Prosperity Index	-0.09	1.00									
Ln (Age)	0.03	-0.01	1.00								
Firm Size	0.18	-0.18	0.04	1.00							
Dividend Dummy	0.01	-0.05	0.03	0.15	1.00						
Leverage	0.03	-0.06	-0.03	0.17	-0.08	1.00					
Tobin's Q	-0.05	-0.11	-0.07	-0.47	0.12	-0.24	1.00				
Closely Held Shares	-0.02	-0.23	-0.09	0.03	0.03	0.01	0.04	1.00			
Market to Book Value	-0.04	-0.11	-0.06	-0.35	0.11	-0.16	0.65	0.03	1.00		
Inflation	0.11	-0.27	0.15	0.01	-0.06	0.01	-0.05	-0.08	-0.03	1.00	
Ln (GDP Per Capita)	-0.09	0.50	-0.16	0.01	0.01	0.02	-0.12	-0.02	-0.11	-0.36	1.00