Firm growth and public corruption: An empirical investigation

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(Preliminary draft; Do not circulate it)

June 12, 2025

Abstract

This paper explores the interplay between corruption and firm growth. We document a negative and statistically significant relationship between public corruption and the growth rate of sales. We combine firm-level data from the World Bank Enterprise Surveys (WBES) and corruption data at the country level from the Varieties of Democracy (V-Dem). Our findings reveal a persistent negative effect of public corruption not only on sales growth but also on labor productivity growth. Our results remain robust under alternative specifications and we provide a variety of plausible channels through which corruption affects firm performance.

Keywords: Corruption, firm growth

JEL Codes: O43, D22, O12

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1 Introduction

In recent years, the pervasive influence of public corruption has garnered significant attention as a critical determinant of economic outcomes worldwide. The detrimental effects of corruption, particularly within the public sector, have increasingly been linked to hindered firm performance and economic stagnation, especially in developing economies. This paper investigates the intricate relationship between public corruption and firm growth, shedding light on how corruption shapes the operational and strategic landscape for businesses globally.

A substantial body of literature, primarily from economics and development studies, has sought to unravel the mechanisms through which corruption affects firm behavior and economic growth. Early works, such as Svensson (2003) and Fisman and Svensson (2007), established that corruption imposes significant costs on firms, often exceeding those of taxation. More recently, an emerging strand of research has empirically demonstrated that corruption not only distorts resource allocation but also stifles innovation and productivity (Paunov, 2016; Fisman et al., 2024). This paper contributes to the growing literature by arguing that public sector corruption exerts a persistent negative effect on firm growth, with its impact modulated by firm-level bribery behavior and many other determinants, such as culture, religion, institutions and knowledge.

Building on the foundational analysis of Fisman et al. (2024), we explore an additional dimension of corruption's implications: the interplay between country-level public sector corruption, as measured by the Public Sector Corruption Index (PSCI) from the Varieties of Democracy (V-Dem) dataset, and firm-specific bribery practices. We examine both the intensive margin (the share of sales spent on informal payments) and the extensive margin (whether a firm engages in bribery) of bribery behavior. Our analysis leverages firm-level data from the World Bank Enterprise Surveys (WBES), covering approximately 86,000 firms across 124 countries from 2006 to 2020, to assess how corruption influences sales growth which is a widely accepted proxy for firm performance. Sales growth is defined as the average annual growth rate of deflated sales over a three-year period, following established methodologies (Fisman and Svensson, 2007; Chauvet and Ehrhart, 2018; Chauvet and Ferry, 2021).

Methodologically, we employ an ordinary least squares (OLS) model, augmented with an instrumental variables (IV) approach to address potential endogeneity, focusing on the interplay of corruption in neighboring countries and regions on national corruption (Becker et al., 2009; Faber and Gerritse, 2012; Jetter and Parmeter, 2018; Borsky and Kalkschmied, 2019; Gründler and Potrafke, 2019). Moreover, our analysis controls for a comprehensive set of firm characteristics—such as size, age, ownership structure, and export status—as well as country-level variables, including GDP per capita, real GDP growth, and population size. We further incorporate country and sector-year fixed effects to account for unobserved heterogeneity and time-varying industry dynamics. Our findings reveal that a one-percentage-point increase in the PSCI is associated with a 25.6% to 39% reduction in sales growth, while a 1% rise in the bribery share reduces growth by 13% to 21.5%. Notably, the decision to pay bribes (extensive margin) shows no significant effect, highlighting the primacy of bribery intensity over its mere occurrence.

Our results remain robust across various specifications, including alternative measures of firm performance and public sector corruption, as well as when applying the same methodology to a broader sample of firms. We also identify channels that affect public corruption and are strongly related to sales growth. These are individualism (Hofstede, 2011), trust and patience (Falk et al., 2018), religion, legal origin, geography, knowledge (Ashraf and Galor, 2013) and institutional quality, such as democracy and regulatory frameworks (Uberti, 2022; Delis et al., 2023). Our findings suggest that firms in countries with stronger democratic institutions and higher knowledge capital experience a partial mitigation of corruption's adverse impacts. Moreover, firms operating in countries with higher levels of individualism and patience experience a positive boost on their performances.

Uncovering the nuanced relationship between corruption in public sector, bribery, and firm growth is particularly significant, as it provides insights into why firms in similar economic environments respond differently to corruption, emphasizing the role of institutional and cultural contexts. Moreover, these findings underscore the need for policymakers to address corruption not merely as an economic distortion but as a systemic barrier to firm-level prosperity and national development.

The remainder of this paper is structured as follows: Section 2 reviews the existing literature, Section 3 introduces the data and empirical strategy, Section 4 presents the benchmark results, Section 5 conducts robustness checks, Section 6 explores mechanisms and heterogeneity, and Section 7 concludes.

2 Literature review

Corruption poses a significant challenge to business operations, particularly in developing economies. For instance, Svensson (2003) documents that most firms in Uganda encounter public corruption and must pay bribes to ensure smooth operations. Similarly, Fisman and Svensson (2007) argue that corruption imposes a greater burden on firms than taxation. Expanding on this idea, Olken and Pande (2012) suggest that corruption aligns with key principles of incentive theory, implying that firms often resort to bribery to sustain operations and enhance profitability.

A central debate in the literature concerns whether corruption "sands the wheels" or "greases the wheels" of economic activity. The "sand the wheels" hypothesis argues that bribery acts as an unofficial tax, reducing productivity and imposing a greater burden than official taxation (Fisman and Svensson, 2007; Alm et al., 2016). In contrast, the "grease the wheels" hypothesis suggests that in countries with excessive regulation and weak institutions, firms may resort to bribery to gain better access to networks and business opportunities (Acemoglu and Verdier, 2000; Méon and Weill, 2010; Hanousek and Kochanova, 2016).

However, empirical evidence overwhelmingly supports the former view, demonstrating that corruption distorts resource allocation, hinders firm performance, and deters long-term investment. Theoretical research further challenges the "grease the wheels" argument, which posits that corruption can facilitate business operations in rigid regulatory environments. Instead, Guriev (2004) contends that corruption worsens bureaucratic inefficiencies, increasing red tape beyond socially optimal levels and ultimately reducing overall welfare, even when it appears to expedite administrative procedures.

A substantial body of research establishes a negative correlation between corruption and firm growth. For example, Fisman and Svensson (2007) find that both bribes and taxes hinder firm growth in Uganda, with bribes exerting a stronger negative effect when location-industry averages are used as instruments. Moreover, Paunov (2016) highlight that corruption prevents small firms from obtaining quality certifications and patents, although it has a limited impact on firms with export status, foreign ownership, or public ownership. This finding is corroborated by Couttenier and Toubal (2017), who demonstrate that corruption reduces the foreign affiliate sales of German multinational firms, while incumbent firms are better positioned to navigate corrupt environments than new entrants.

The impact of corruption on firms varies depending on location, sector, and time. Svensson (2003) and Bai et al. (2017) show that the prevalence and effects of bribery differ across firms, with smaller firms being disproportionately affected. Amodio et al. (2022) find that targeted anti-corruption policies, such as performance-based incentives for tax inspectors, can mitigate corruption. More recently, Ciccone and Papaioannou (2022) and Fisman et al. (2024) emphasize that firms' responses to corruption are shaped by broader institutional frameworks, including legal enforcement and regulatory quality.

Focusing on Central and Eastern Europe (CEE) and former Soviet countries, De Rosa et al. (2015) find that firms operating in highly corrupt environments with weak legal frameworks achieve higher productivity if they refrain from paying bribes. Similarly, Hanousek and Kochanova (2016) identify a significant negative relationship between bureaucratic corruption and firm performance, showing that higher mean bribery levels within a cluster lead to declines in sales and labor productivity growth. However, they also note that greater variation in bribery levels within a cluster can have a positive effect on firm growth. In the context of tax corruption, Alm et al. (2016) argue that bribing tax officials increases tax evasion and lowers reported sales. Additionally, Athanasouli and Goujard (2015) find that corruption at the regional level undermines management quality, weakens decision-making processes, and adversely affects managerial educational attainment.

Examining the relationship between firm growth and corruption, Bai et al. (2017) use data from Vietnam to show that higher firm growth leads to lower levels of corruption, with this effect being more pronounced for firms with greater ease of relocation. More recently, Amodio et al. (2022) conducted a randomized experiment in the Kyrgyz Republic, finding that corruption declines when tax inspectors receive performance-based incentives. The closest study to ours is Fisman et al. (2024), which provides empirical evidence that corruption significantly affects firm growth rates.

At the macroeconomic level, research consistently finds a persistent negative relationship between corruption and economic growth. Drawing on historical data from 1795 to 2010, Uberti (2022) demonstrates that corruption hampers long-term economic development. Similarly, Aidt et al. (2008) show that corruption exerts a significant negative impact on economic growth in both the short and long term, particularly in countries with strong institutional frameworks. Using cultural dimensions as instrumental variables, Bentzen (2012) further confirms corruption's detrimental effect on GDP per capita.

Beyond institutional factors, cultural traits play a crucial role in shaping firm behavior and regulatory environments. For instance, Davis and Williamson (2016) show that countries with higher levels of individualism tend to have more business-friendly regulations, requiring fewer procedures, less time, and lower costs to register a firm. Cultural predispositions toward risk-taking also influence entrepreneurship and financial decision-making. Jonsson and Ouyang (2023) find that parents' risk-taking culture increases their children's likelihood of becoming entrepreneurs, though it negatively affects firm performance indicators such as revenue, added value, and profit margins. Similarly, Chanda and Unel (2021) demonstrate that risk-taking preferences contribute to entrepreneurship among second-generation Americans, while Ek et al. (2023) show that parents' risk-taking culture increases their children's participation in high-risk assets and stock markets.

The literature offers several policy implications. Notably, Bai et al. (2017) suggest that firm growth itself can reduce corruption, implying that policies fostering economic expansion may have anti-corruption benefits. However, Pahula et al. (2024) caution that fiscal consolidation, particularly through tax increases, negatively affects firm growth in developing countries. Furthermore, Potrafke (2019) highlight the role of electoral cycles in shaping perceptions of public-sector corruption, particularly when elections occur earlier than expected or are triggered by corruption scandals, underscoring the significance of electoral timing in anti-corruption strategies.

3 Data and Empirical strategy

3.1 Data

The firm-level dataset utilized in this paper is derived from the Enterprise Surveys, which are provided by the World Bank (World Bank, 2024). These surveys were conducted through face-to-face interviews with firm owners and senior managers, yielding valuable insights into various key business indicators, including sales, employment, and the broader business environment. The majority of the surveyed countries are classified as low- and middle-income economies, as defined by the World Bank. However, a few high-income countries, such as Greece, Italy, Israel, and Portugal, are also represented. Our sample consists of approximately 86,000 firms operating in 124 countries from 2006 to 2020. Following the recommendation of Pahula et al. (2024), we include only firms that have been in operation for more than three years.

In the benchmark analysis, our outcome variable is a widely used proxy for firm growth in the literature (Fisman and Svensson, 2007; Chauvet and Ehrhart, 2018; Chauvet and Ferry, 2021; Fisman et al., 2024; Pahula et al., 2024). This proxy is defined as the average annual growth rate of sales over the period from $t-1$ to $t-3$. Sales are first deflated, converted to U.S. dollars, and then transformed into logarithmic form. The formula used to calculate sales growth is as follows:

$$\text{Sales growth}_{(t-1,\,t-3)} = \frac{\log(\text{Sales}_{\,t-1}) - \log(\text{Sales}_{\,t-3})}{2}$$

Following the approach of Fisman et al. (2024), we exclude firms reporting sales changes below -200% or above 200%, as such extreme values likely reflect data errors.

Our main variable of interest is the Public Sector Corruption Index (PSCI), which is provided by the Varieties of Democracy (V-Dem) dataset and published by the University of Gothenburg, Sweden (Coppedge et al., 2024a). The V-Dem research team consists of more than 3,700 country experts who provide expert assessments by completing online surveys. These experts are typically academics and are citizens or residents of the countries they evaluate [1].

The PSCI (*v2x_pubcorr*) measures the extent to which *"public sector employees grant favors in exchange for bribes, kickbacks, or other material inducements, and how often they steal, embezzle, or misappropriate public funds or other state resources for personal or family use"* (Coppedge et al., 2024b). The index is calculated as the unweighted average of two separate variables measuring public sector bribery (*v2excrptps*) and embezzlement (*v2exthftps*). It ranges from 0 to 1, where 0 represents the lowest level of public sector corruption and 1 represents the highest. The index is averaged over the same period as the outcome variable, specifically $(t-1,\, t-3)$.

Additionally, we incorporate the two main bribery variables used in Fisman et al. (2024). Specifically, the World Bank Enterprise Survey (WBES) includes a question assessing the extent of corruption faced by businesses, and answered by senior managers or owners:

"It is said that establishments are sometimes required to make gifts or informal payments to public officials to 'get things done' with regard to customs, taxes, licenses, regulations, services, etc. On average, what percentage of total annual sales, or estimated total annual value, do establishments like this pay in informal payments or gifts to public officials for this purpose?"

Based on these responses, we define two key measures of bribery, namely bribery share and non-zero

[1] In our analysis, we employ version 14 of the V-Dem dataset, published in March 2024

bribery. Bribery share quantifies the financial burden of bribery as the total amount of informal payments divided by the previous year's sales, capturing the intensive margin of corruption. On the other hand, non-zero bribery is a binary variable equal to 1 if bribery share is greater than zero, reflecting the extensive margin—whether a firm engages in bribery at all. Together, these variables provide a comprehensive view of both the frequency and intensity of informal payments among surveyed firms. Following Fisman and Svensson (2007) and Fisman et al. (2024), we exclude firms reporting informal payments exceeding 50% of their sales to mitigate potential data errors.

Moreover, we control for a comprehensive set of firm characteristics, following Fisman et al. (2024). These include the logarithms of employment and sales three periods ago (both expressed in U.S. dollars) as initial conditions, as well as indicator variables for ownership (state or foreign) to account for ownership characteristics. We also include an indicator variable for export status, which equals 1 if the firm is outward-looking—that is, if part of its sales is exported directly or indirectly. Furthermore, we control for the logarithm of firm age and the "kvetch index", which measures firms' complaints. This index is calculated as the mean of the differences between a firm's perception of transport, electricity, and access to land as obstacles and the country's average complaints about these factors.

At the country level, we follow several studies, including Fisman and Svensson (2007), Chauvet and Ehrhart (2018), Chauvet and Ferry (2021), and Pahula et al. (2024), incorporating the logarithm of GDP per capita as a proxy for economic development. Additionally, we account for economic buoyancy by including the real GDP growth rate and consider country size using the logarithm of population. The country-level data described above are sourced from the World Development Indicators (WDI) of the World Bank. To mitigate potential endogeneity concerns, we imply the approach of Chauvet and Ehrhart (2018), Chauvet and Ferry (2021) and Pahula et al. (2024). Thus, all country-level variables are lagged by one period and averaged over a three-year period, specifically $(t-3,\ t-5)$, except for population, which is defined over $(t-1,\ t-3)$.

3.2 Empirical strategy

We examine the effect of public sector corruption and firms' bribery behavior on firm growth using an OLS model. Specifically, we estimate the following model:

$$y_{isc(t-1,t-3)} = \alpha + \beta_1 PSCI_{c(t-1,t-3)} + \beta_2 BS_i + \beta_3 NZB_i + \gamma Z_{isct} + \delta X_{c(t-3,t-5)} + \mu_c + \tau_{st} + \varepsilon_{isct} \quad (1)$$

where $y_{isc(t-1,t-3)}$ represents the average annual growth of sales for firm i in sector s and country c, as described in Section 3.1. The variable $PSCI_{c(t-1,t-3)}$ denotes the Public Sector Corruption Index. Additionally, BS_i and NZB_i are the two variables capturing bribery activity—bribery share and non-zero bribery, respectively. Regarding control variables, Z_{isct} represents a set of firm-level characteristics that vary over time, while $X_{c(t-3,t-5)}$ consists the set of country-level variables. Additionally, we include country fixed effects μ_c to account for time-invariant country-specific characteristics and industry-by-year fixed effects τ_{st} to control for time-varying business cycles at the industry level. Finally, standard errors are clustered at the country-survey-year level, as the variation in our main variable of interest occurs at the country-year level.

Table 1 presents summary statistics for the full sample used in our analysis. On average, firms report spending 0.8% of their sales on informal payments, while approximately 15% of firms indicate that they make such payments. Regarding firm characteristics, nearly one-fifth of firms are outward-looking—that is, they export their products directly or indirectly—7% are fully or partially owned by a foreign entity, and the average firm age is approximately 16 years.

4 Results

Table 2 provides evidence that public sector corruption and bribery behavior are associated with firm growth. Columns (1) to (3) examine the impact of country-level public corruption and the intensive margin of bribery (i.e., the extent to which bribery occurs) on sales growth. Columns (4) to (6) focus on the effects of public corruption and the extensive margin of bribery (i.e., whether a firm engages in bribery) on sales growth. Finally, Columns (7) and (8) present the combined effect of public corruption and both margins of bribery on firm growth.

Focusing on Columns (1) to (3), our findings indicate a negative and statistically significant impact of public corruption on firm growth, with estimates ranging from −34.7% in Column (1) to −25.6% in Column (3). Regarding the bribery share, we observe that its impact becomes negative and significant only after incorporating firm-level and country-level controls, consistent with Fisman et al. (2024). Economically, a 1 percentage point increase in the bribery share reduces sales growth by approximately 16 to 17 percent.

Columns (4) to (6) are predicated on the same rationale as defined above, with the exception of utilizing the extensive margin in lieu of the intensive margin. It is evident that there is a negative and significant effect of public sector corruption on firm growth, in terms of both value and level of significance. Conversely, the decision of a firm to pay bribes has neither a constant effect (because it changes sign after adding firm-level and country-level controls), nor a statistically significant effect on its growth.

Finally, in Columns (7) to (9), we incorporate the Public Sector Corruption Index, the bribe share measure, and the indicator variable for nonzero bribes. Our conclusions are threefold. First, we confirm the negative and significant effect of public sector corruption on sales growth. Specifically, a one percentage point increase in the PSCI is associated with a reduction in sales growth ranging from 35 to 39 percent. Second, our results indicate that the intensive margin of bribery has a significant effect on sales growth, whereas the extensive margin does not. Finally, we observe a decline in firm growth of 13 to 21.5 percent due to an increase in bribe payments, while firms that decide to pay bribes experience an insignificant increase in sales growth of approximately 1 percent.

Focusing on firm-level variables, our results align with Fisman et al. (2024). Specifically, sales level three years ago has a significant and negative effect on sales growth, suggesting a "catching-up effect," as defined by Chauvet and Ehrhart (2018). This implies that firms with lower sales three years ago tend to experience higher growth rates in period t than those that already had high sales. Additionally, employment levels three years ago, which serve as a proxy for firm size, have a positive and highly significant effect on sales growth, indicating that larger firms tend to grow at higher rates.

Interestingly, the coefficient for firm age is negative and significant, suggesting that younger firms exhibit higher sales growth rates. Regarding ownership status, foreign-owned firms (fully or partially) experience significantly higher sales growth—approximately 4% more—compared to state-owned firms. Moreover, export-oriented enterprises tend to achieve higher growth rates, around 4% more than firms focused solely on the domestic market. Finally, the effect of the "kvetch index" is significantly negative, implying that greater perceived obstacles in any of the index's components are associated with lower firm growth. Regarding country-level variables, we document that only the GDP per capita affects significantly the growth of sales of firms. A possible interpretation of the latter result is again a "catching-up effect", that is, a firm operating in a low-income country tends to have better performance (Chauvet and Ferry, 2021).

Overall, our findings demonstrate that the environment in which business entities operate exerts a significant influence on their performance. This finding is of critical importance as it suggests an additional parameter that should be taken into serious consideration by managers and owners of firms when constructing their business plans and allocating resources from activities such as R&D to bribes.

Motivated by these results, in Table 3, we examine the interactions between bribery variables and the PSCI. The results documented are threefold. Firstly, the negative effect of corruption in the public sector on firm growth is well-established. Furthermore, we observe that the effects of bribery variables are similar to those documented in Table 2, except for a reduction in the significance of the intensive margin's effect on sales growth. Finally, we focus on the effects of interaction terms on the outcome variable. Starting with the share of informal payments, we notice that in countries characterized by high levels of corruption in the public sector, an increase in informal payments positively, yet insignificantly, affects sales growth. Similarly, if a firm operating in a country with high levels of corruption decides to pay bribes, it will not observe a significant effect on its sales growth.

5 Robustness checks

5.1 Alternative measures of firm growth

This section assesses the robustness of the baseline analysis by employing alternative measures of firm growth rates. Following Fisman et al. (2024), we use sales growth in real terms, labor productivity growth in both nominal and real terms, and employment growth to validate our findings. Focusing on labor productivity growth, we construct it by calculating the sales-per-employment ratio for the periods $t-1$ and $t-3$, taking their difference, and dividing by 2. Similarly, employment growth is calculated as the difference between the logarithm of full-time permanent employees at $t-1$ and $t-3$, divided by 2.

Table 4 presents the results, showing that the PSCI has a negative and statistically significant impact on both nominal and real sales growth, as well as on nominal labor productivity growth. The magnitude of this effect varies, with the largest decline observed in real sales growth (-67%) and a smaller but still significant effect on nominal labor productivity growth (-21.5%). In contrast, the PSCI does not appear to have a significant effect on employment growth.

5.2 Alternative sample

This section applies the methodology proposed by Chauvet and Ehrhart (2018) and Chauvet and Ferry (2021), which entails excluding the top 1% of firms with the highest growth rates to mitigate the influence of extreme outliers. By doing so, we ensure that our results are not disproportionately driven by firms experiencing exceptional growth, which could bias the estimated effects. The findings, reported in Table 5, provide further validation of our baseline results.

A qualitative comparison between Table 5 and Table 4 confirms the robustness of our initial estimates. However, in terms of magnitude, the observed effects are notably stronger when excluding these high-growth firms. Specifically, a direct comparison of Column (1) in both tables reveals that the estimated impact of the PSCI in Table 5 is nearly twice as large as in Table 4. This suggests that firms exhibiting exceptionally high growth may have underlying characteristics—such as superior market positioning, access to exclusive resources, or innovative capabilities—that make them less susceptible to the negative effects of corruption.

5.3 Alternative measures of the PSCI from the V-Dem

In this section, we focus on the key explanatory variable, namely the PSCI, and explore alternative variables that replicate its effects. For that purpose we replace the PSCI with other variables from the V-Dem that may be possible to affect significantly firm growth and they are somehow related to the PSCI. Those variables are the executive bribery and corrupt exchanges (*v2exbribe*), executive embezzlement and theft (*v2exbribe*), the public sector corrupt exchanges (*v2excrptps*) and finally the public sector theft (*v2exthftps*).

Table 6 presents the results. We find that only public sector corruption exchanges and public sector theft have a negative and statistically significant effect on sales growth, with both reducing growth by approximately 21%. Additionally, the coefficients related to the bribery share yield noteworthy insights. Specifically, a 1% increase in the bribery share leads to a 20% decline in sales growth, a highly significant effect at the 1% level.

Motivated by these findings, we replicate the empirical methodology of Table 2, replacing the PSCI with Public Sector Corrupt Exchanges (PSCE) and Public Sector Theft (PST). To briefly define these variables, PSCE captures the frequency with which public officials grant favors in exchange for bribes, gifts, kickbacks, or any other material inducement. PST, on the other hand, measures the extent to which public sector employees engage in theft, embezzlement, or the misappropriation of public funds or state resources for personal or familial use.

Similar to the PSCI, both variables are recoded on a continuous scale from 0 to 1, where 0 indicates that such incidents rarely or never occur, while 1 signifies that they are routine and widespread. The results, presented in Table 7, show that, on average, an increase in either PSCE or PST is associated with a 21% decline in sales growth. The primary distinction lies in the level of statistical significance: while PSCE is significant at the 10% level, PST demonstrates a stronger effect, remaining significant at the 5% level.

5.4 Control of Corruption and Corruption Perception Index

This section incorporates two widely used corruption variables in the literature: the Control of Corruption (CC), provided by the World Governance Indicators dataset of the World Bank, and the Corruption Perceptions Index (CPI), provided by Transparency International. To ensure comparability, we rescaled these variables on a continuous scale from 0 to 1, where 0 represents a least corrupt country and 1 represents a highly corrupt country.

Table 8 presents the results. Starting with the Control of Corruption indicator, the results align with our baseline findings, confirming that higher levels of corruption are associated with a significant decline in sales growth. Notably, only the intensive margin has a statistically significant effect on the outcome variable. In contrast, the Corruption Perceptions Index (CPI) does not exhibit any significant impact on sales growth. It is important to note that the sample size for this analysis has decreased by nearly one-third, as the data are only available for comparison from 2012 onward. Despite this reduction, the bribery share variable remains negative and statistically significant, although its level of significance has slightly diminished.

6 Mechanisms

6.1 Trust and culture

Tables 9 and 10 provide evidence on the interplay between culture, trust, corruption, bribery, and firm growth.

Starting with Table 9, we measure culture using the six variables provided by Hofstede (2011), namely the Power Distance Index, Individualism, Motivation Toward Achievement and Success, the Uncertainty Avoidance Index, Long-Term Orientation, and Indulgence. The literature provides evidence of the significance of culture in economic prosperity (Bentzen, 2012), as well as society's perspective on the entry of new firms (Davis and Williamson, 2016). We document that the most important variable is individualism. The effect of individualism is positive and statistically significant in sales growth. Specifically, we support the idea that an increase of individualism by one percent implies an increase in sales growth by 14.2%. We also document that the bribery variables, as well as the PSCI, replicate the baseline results reported in Table 2.

Moving on to Table 10, we incorporate variables from Falk et al. (2018) to investigate the effects of contemporary cultural and economic preferences on firm growth. For example, Chanda and Unel (2021) document that second-generation immigrants originating from countries with higher levels of economic risk-taking attitudes are more likely to become entrepreneurs. Moreover, Ek et al. (2023) argue that a risk-taking culture inherited from parents affects children's preferences regarding their participation in assets, stocks, and mutual funds. Our results suggest that firms operating in countries with higher levels of patience experience a positive and significant increase in their growth rates. However, countries with high levels of economic trust exhibit a negative and significant effect on sales growth. Interestingly, we document that neither the bribery share nor the non-zero bribery has a significant effect on sales growth, in contrast to the PSCI, which retains its negative and highly significant effect on sales growth, as in Table 2.

6.2 Religion, legal origins, and institutions

Table 11 provides evidence on the effects of religion, legal origins, and institutions on firm performance. Specifically, Columns (1) to (3) focus on religion, using the share of each religion in the population. Columns (4) to (6) incorporate legal origin, and the last three columns use proxies for the quality of institutions.

Regarding religion, we document that there is a significant effect only in countries where there is a high concentration of Muslims. Specifically, a one percent increase in the share of Muslims leads to a 5.4 percent decrease in the growth rate of sales. This is in line with other studies, such as Delis et al. (2023), supporting that the Quran imposes many restrictions regarding entrepreneurship, for example, it prohibits earning income/interest from any monetary investments. Moving forward, we note that legal origin does not have a significant effect on firm performance.

Focusing on the quality of institutions, we observe that executive constraints and democracy positively and significantly affect sales growth. Intuitively, a 1% improvement in executive (institutionalized) constraints on the decision-making power of chief executives leads to a 1.4% increase in the sales growth rate. Similarly, a 1% improvement in the quality of democracy is associated with an almost 8% increase in sales growth.

Motivated by these results, we further investigate the role of institutional quality in sales growth.

For this purpose, we follow the methodology of Uberti (2022) and use additional variables from the V-Dem, namely the quality of democracy, regulatory quality, property rights, and state capacity. The results are presented in Table 12.

The results show that the quality of democracy and regulations significantly impact firms. Specifically, a country characterized by high levels of democracy experiences a 29 percent increase in sales growth, while a country with a well-defined regulatory system, that is, a state that exercises control only when necessary, is responsible for a 31 percent increase in sales growth.

6.3 Knowledge

Table 13 presents the effect of knowledge on sales growth. The variables used in this analysis include average years of schooling and scientific articles per capita, sourced from Ashraf and Galor (2013). Our findings indicate that both variables have a positive and significant effect on sales growth. Economically, a 1 percent increase in scientific articles per capita leads to a 23.5 percent increase in sales growth, while an additional year of schooling improves a firm's growth rate by 1.5 percent. Moreover, the negative effect of the PSCI on sales growth remains statistically significant at the 1 percent level.

6.4 Geography

In this section, we provide evidence that geography plays a crucial role in the relationship between corruption and firm performance. Table 14 presents our results, with geographical factors obtained from Ashraf and Galor (2013).

Our findings confirm that the effect of the Public Sector Corruption Index (PSCI) remains negative and statistically significant at the 1% level, with an impact ranging from -17% to -14.2%. Additionally, only the intensive margin of bribery has a significant effect on firm performance, reducing it by approximately 16–17%.

Finally, examining geographical variables, we find that firms located in regions with extensive arable land, mild temperatures, and greater distance from rivers and coastlines exhibit a comparative advantage over others.

7 Conclusion

This paper examines the relationship between public sector corruption, bribery behavior, and the growth of individual firms on the basis of a comprehensive set of business surveys in 124 economies over the period 2006-20, based on the experience of nearly 86,000 firms.

The results show that there is a negative relationship between public corruption and growth rate of sales. Sales growth rate decreased by 27% when the PSCI increased by 1%. The effect is pretty strong, accounting for many aspects that might by influential, such as culture, institutions, and geography. Furthermore, high levels of corruption affect other measures of firm growth, such as labor productivity.

Moreover, we employ jackknife averages as instrumental variables to estimate the country-level degree of corruption. Specifically, we use the average PSCI of neighboring countries and the average PSCI of countries with similar cultural characteristics. The results reinforce the negative relationship between public corruption and firm growth while also confirming the strong positive correlation between regional and national levels of corruption.

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Tables

Table 1: Descriptive statistics

	Observations	Mean	Std. Dev.	Median	Min	Max
Firm performance						
Sales growth (annual, USD)	85613	0.065	0.338	0.051	-1.981	1.997
Sales growth, real (annual, USD)	83574	-1.734	1.375	-1.624	-6.574	2.046
Labor productivity growth (annual, USD)	85564	0.018	0.344	0.008	-3.708	3.012
Labor productivity growth, real (annual, USD)	83526	-0.015	0.334	-0.026	-3.795	2.836
Employment growth (annual)	85564	0.047	0.190	0.000	-2.996	2.578
Corruption						
Bribery share	85613	0.008	0.034	0.000	0.000	0.500
Non-zero Bribery	85613	0.152	0.359	0.000	0.000	1.000
PSCI	85613	0.556	0.243	0.589	0.029	0.974
Firm-level control variables						
log(Sales t-3; USD)	85613	13.300	2.470	13.262	0.138	28.478
log(Employees t-3)	85613	3.267	1.413	2.996	0.000	11.067
State ownership	85613	0.015	0.120	0.000	0.000	1.000
Foreign ownership	85613	0.073	0.243	0.000	-0.090	1.000
Exporter	85613	0.199	0.399	0.000	0.000	1.000
Propensity to complain (kvetch index)	85613	0.000	0.877	-0.124	-2.408	3.662
log(Age of firm)	85613	2.780	0.682	2.773	1.386	5.357
Country-level control variables						
log(GDP per capita, USD)	85613	9.213	0.876	9.303	6.742	10.757
Real GDP growth	85613	4.718	3.119	4.595	-8.261	23.905
log(Population)	85613	17.296	1.856	17.223	12.307	21.014
Hofstede 6-D variables						
Power Distance Index	73448	0.741	0.141	0.770	0.130	1.000
Individualism	73448	0.308	0.179	0.270	0.000	0.810
Motivation toward Achievement-Success	73448	0.484	0.140	0.490	0.090	1.000
Uncertainty Avoidance Index	73448	0.673	0.213	0.650	0.130	1.000
Long-term Orientation	70190	0.362	0.193	0.350	0.010	0.850
Indulgence	64350	0.359	0.227	0.290	0.000	0.890
GPS variables						
Patience	60582	-0.149	0.211	-0.109	-0.613	0.457
Risk-taking	60582	-0.079	0.274	-0.125	-0.792	0.971
Positive reciprocity	60582	-0.041	0.394	-0.022	-1.038	0.570
Negative reciprocity	60582	-0.014	0.239	0.026	-0.489	0.739
Altruism	60582	-0.015	0.395	-0.106	-0.940	0.906
Trust	60582	-0.008	0.308	-0.097	-0.706	0.609
Religion, legal origin, and institutional variables						
Protestants	84026	0.050	0.103	0.011	0.000	0.660
Catholics	84625	0.306	0.383	0.049	0.000	0.973
Muslims	84625	0.234	0.332	0.060	0.000	0.994
British legal origin	84625	0.246	0.431	0.000	0.000	1.000
French legal origin	84625	0.469	0.499	0.000	0.000	1.000
Socialist legal origin	84625	0.285	0.451	0.000	0.000	1.000
Executive constraints	83314	4.033	1.685	3.463	1.000	7.000
Social infrastructure	64552	0.369	0.154	0.320	0.113	0.869
Democracy	83314	0.369	0.312	0.300	0.000	1.000
Quality of democracy	85613	0.469	0.229	0.448	0.093	0.910
Regulatory quality	85613	0.285	0.267	0.186	0.004	0.963
Property rights	85613	0.244	0.153	0.220	0.048	0.863
State capacity	84742	0.412	0.245	0.394	0.001	0.960
Geographical Variables						
Mean distance to nearest waterway	83958	0.392	0.546	0.224	0.008	2.386
log(Arable land area)	84191	10.914	1.874	10.573	4.382	14.289
log(Soil fertility)	83301	-0.531	0.328	-0.482	-1.408	-0.039
log(Temperature)	84625	3.611	0.265	3.738	2.657	3.894
Knowledge-Related Variables						
Scientific articles	79255	0.029	0.045	0.011	0.000	0.263
Years of schooling	71220	4.443	2.436	3.571	0.409	9.620

Notes: Firm-level variables are taken from the World Bank Enterprises Survey (World Bank, 2024); Country-level variables are taken from the V-Dem (Coppedge et al., 2024a), the World Development Indicators (WDI), Hofstede (2011), Falk et al. (2018) and Ashraf and Galor (2013).

Table 2: Impact of PSCI and bribery on sales growth

Dep. variable:	Growth of sales, per annum								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PSCI	-0.347**	-0.357***	-0.269**	-0.348**	-0.358***	-0.269**	-0.347**	-0.357***	-0.269**
	(0.148)	(0.136)	(0.128)	(0.148)	(0.136)	(0.128)	(0.148)	(0.136)	(0.128)
Bribery share	-0.085	-0.168**	-0.155**				-0.129*	-0.215***	-0.199***
	(0.067)	(0.069)	(0.069)				(0.069)	(0.068)	(0.069)
Non-zero Bribery				0.002	-0.002	-0.002	0.009	0.009	0.009
				(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
log(Sales t-3; USD)		-0.052***	-0.052***		-0.052***	-0.052***		-0.052***	-0.052***
		(0.004)	(0.004)		(0.004)	(0.004)		(0.004)	(0.004)
log(Employees t-3)		0.047***	0.048***		0.047***	0.048***		0.047***	0.048***
		(0.004)	(0.004)		(0.004)	(0.004)		(0.004)	(0.004)
State ownership		-0.008	-0.007		-0.009	-0.008		-0.008	-0.007
		(0.016)	(0.016)		(0.016)	(0.016)		(0.016)	(0.016)
Foreign ownership		0.039***	0.039***		0.039***	0.039***		0.039***	0.039***
		(0.007)	(0.007)		(0.007)	(0.007)		(0.007)	(0.007)
Exporter		0.041***	0.041***		0.041***	0.041***		0.041***	0.041***
		(0.005)	(0.005)		(0.005)	(0.005)		(0.005)	(0.005)
Propensity to complain (kvetch index)		0.004**	0.005**		0.004**	0.004**		0.004**	0.004**
		(0.002)	(0.002)		(0.002)	(0.002)		(0.002)	(0.002)
log(Age of firm)		-0.034***	-0.034***		-0.034***	-0.034***		-0.034***	-0.034***
		(0.003)	(0.003)		(0.003)	(0.003)		(0.003)	(0.003)
log(GDP per capita, USD)			-0.294***			-0.296***			-0.293***
			(0.076)			(0.076)			(0.076)
Real GDP growth			0.005			0.006			0.005
			(0.004)			(0.004)			(0.004)
log(Population)			-0.128			-0.127			-0.127
			(0.129)			(0.130)			(0.130)
Constant	0.259***	0.884***	5.728**	0.258***	0.883***	5.730**	0.258***	0.884***	5.713**
	(0.082)	(0.083)	(2.388)	(0.082)	(0.083)	(2.395)	(0.082)	(0.083)	(2.396)
Observations	85609	85609	85609	85609	85609	85609	85609	85609	85609
Adj. R^2	0.13	0.19	0.19	0.13	0.19	0.19	0.13	0.19	0.19
Nr. countries	124	124	124	124	124	124	124	124	124
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls		All	All		All	All		All	All
Country-level controls			All			All			All

Notes: This table presents the OLS estimates for the relationship between the Public Sector Corruption Index, bribery behavior, and their effects on firm sales growth. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country × survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively..

Table 3: Interactions between PSCI and bribery variables

Dep. variable:	Growth of sales, per annum					
	(1)	(2)	(3)	(4)	(5)	(6)
PSCI	-0.348**	-0.358***	-0.270**	-0.349**	-0.359***	-0.271**
	(0.148)	(0.136)	(0.128)	(0.148)	(0.137)	(0.129)
Bribery share	-0.210	-0.326*	-0.312*			
	(0.171)	(0.166)	(0.165)			
PSCI × Bribery share	0.192	0.241	0.240			
	(0.250)	(0.244)	(0.243)			
Non-zero Bribery				-0.005	-0.013	-0.010
				(0.017)	(0.017)	(0.017)
PSCI × Non-zero Bribery				0.012	0.017	0.013
				(0.028)	(0.028)	(0.028)
Observations	85609	85609	85609	85609	85609	85609
Adj. R^2	0.13	0.19	0.19	0.13	0.19	0.19
Nr. countries	124	124	124	124	124	124
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls		All	All		All	All
Country-level controls			All			All

Notes: This table presents the OLS estimates for the relationship between the Public Sector Corruption Index (PSCI), bribery behavior, their interactions, and their effects on firm sales growth. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country × survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 4: Impact of PSCI and bribery variables on alternative measures of firm growth

Dep. variable:	Growth of sales (annual, USD)	Growth of sales, real (annual, USD)	Labor productivity growth (annual, USD)	Labor productivity growth, real (annual, USD)	Employment growth (annual)
	(1)	(2)	(3)	(4)	(5)
PSCI	-0.269**	-0.670***	-0.215*	-0.107	-0.054
	(0.128)	(0.156)	(0.122)	(0.090)	(0.045)
Bribery share	-0.199***	-0.169**	-0.160**	-0.157**	-0.044
	(0.069)	(0.070)	(0.074)	(0.074)	(0.030)
Non-zero Bribery	0.009	0.014**	0.004	0.007	0.005*
	(0.006)	(0.006)	(0.006)	(0.006)	(0.003)
Observations	85609	83570	85560	83522	85560
Adj. R^2	0.19	0.95	0.20	0.16	0.12
Nr. countries	124	123	124	123	124
Sector-Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All	All
Country-level controls	All	All	All	All	All

Notes: This table shows the OLS coefficients of Public Sector Corruption Index as well as the bribery behavior (amount of money as a share of total sales, and if the firm will bribe or not) and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 5: Impact of PSCI and bribery on an alternative sample following Chauvet and Ehrhart (2018)

Dep. variable:	Growth of sales (annual, USD)	Growth of sales, real (annual, USD)	Labor productivity growth (annual, USD)	Labor productivity growth, real (annual, USD)	Employment growth (annual)
	(1)	(2)	(3)	(4)	(5)
PSCI	-0.512**	-0.580***	-0.449*	-0.017	-0.063
	(0.242)	(0.160)	(0.234)	(0.112)	(0.045)
Bribery share	-0.278***	-0.162**	-0.237***	-0.149*	-0.047
	(0.087)	(0.079)	(0.086)	(0.078)	(0.032)
Non-zero Bribery	0.007	0.018***	0.002	0.010	0.005*
	(0.007)	(0.006)	(0.007)	(0.006)	(0.003)
Observations	86279	84236	86230	84188	86230
Adj. R^2	0.26	0.94	0.27	0.16	0.11
Nr. countries	124	123	124	123	124
Sector-Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All	All
Country-level controls	All	All	All	All	All

Notes: This table shows the OLS coefficients of Public Sector Corruption Index as well as the bribery behavior (amount of money as a share of total sales, and if the firm will bribe or not) and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 6: Impact of alternative measures of PSCI and bribery on sales growth

Dep. variable:	Growth of sales, per annum			
	(1)	(2)	(3)	(4)
Bribery share	-0.199***	-0.200***	-0.198***	-0.200***
	(0.070)	(0.069)	(0.069)	(0.069)
Non-zero Bribery	0.008	0.008	0.009	0.009
	(0.006)	(0.006)	(0.006)	(0.006)
Executive bribery - corrupt exchanges	0.061			
	(0.051)			
Executive embezzlement - theft		0.082		
		(0.074)		
PS corrupt exchanges			-0.211*	
			(0.109)	
PS theft				-0.208**
				(0.087)
Observations	85609	85609	85609	85609
Adj. R^2	0.19	0.19	0.19	0.19
Nr. countries	124	124	124	124
Sector-Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All
Country-level controls	All	All	All	All

Notes: This table shows the OLS coefficients of Public Sector Corruption Index as well as the bribery behavior (amount of money as a share of total sales, and if the firm will bribe or not) and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country × survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 7: Impact of PSCE, PST and bribery on sales growth

Dep. variable:	Growth of sales, per annum					
	(1)	(2)	(3)	(4)	(5)	(6)
PS corrupt exchanges	-0.211*	-0.212*	-0.211*			
	(0.109)	(0.110)	(0.109)			
PS theft				-0.208**	-0.208**	-0.208**
				(0.087)	(0.087)	(0.087)
Bribery share	-0.154**		-0.198***	-0.156**		-0.200***
	(0.069)		(0.069)	(0.069)		(0.069)
Non-zero Bribery		-0.002	0.009		-0.002	0.009
		(0.006)	(0.006)		(0.006)	(0.006)
Observations	85609	85609	85609	85609	85609	85609
Adj. R^2	0.19	0.19	0.19	0.19	0.19	0.19
Nr. countries	124	124	124	124	124	124
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All	All	All
Country-level controls	All	All	All	All	All	All

Notes: This table shows the OLS coefficients of Public Sector Corrupt Exchanges as well as the bribery behavior (amount of money as a share of total sales, and if the firm will bribe or not) and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 8: Impact Control of Corruption, CPI and bribery on sales growth

Dep. variable:	Growth of sales, per annum					
	(1)	(2)	(3)	(4)	(5)	(6)
Bribery share	-0.134*	-0.218***	-0.200***	-0.130	-0.181*	-0.180*
	(0.069)	(0.069)	(0.070)	(0.099)	(0.099)	(0.098)
Non-zero Bribery	0.009	0.009	0.009	-0.008	-0.005	-0.005
	(0.005)	(0.006)	(0.006)	(0.009)	(0.009)	(0.009)
Control of Corruption	-0.686**	-0.392	-0.543**			
	(0.281)	(0.289)	(0.245)			
Corruption Perception Index				-0.746	-0.670	-0.573
				(1.641)	(1.645)	(1.837)
Observations	85375	85375	85375	31398	31398	31398
Adj. R^2	0.13	0.18	0.19	0.10	0.16	0.16
Nr. countries	124	124	124	87	87	87
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls		All	All		All	All
Country-level controls			All			All

Notes: This table shows the OLS coefficients of Control of Corruption as well as the bribery behavior (amount of money as a share of total sales, and if the firm will bribe or not) and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 9: The role of culture (Hofstede, 2011)

Dep. variable:	Growth of sales, per annum					
	(1)	(2)	(3)	(4)	(5)	(6)
PSCI	-0.118**	-0.106***	-0.145***	-0.146***	-0.144***	-0.143***
	(0.049)	(0.038)	(0.040)	(0.040)	(0.038)	(0.046)
Bribery share	-0.219**	-0.218**	-0.224**	-0.224**	-0.214*	-0.209*
	(0.106)	(0.107)	(0.107)	(0.108)	(0.109)	(0.113)
Non-zero Bribery	0.009	0.008	0.008	0.008	0.006	0.002
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Power Distance Index	-0.088					
	(0.059)					
Individualism		0.142**				
		(0.062)				
Motivation toward Achievement-Success			-0.006			
			(0.049)			
Uncertainty Avoidance Index				0.004		
				(0.045)		
Long-term Orientation					0.084	
					(0.058)	
Indulgence						-0.028
						(0.068)
Observations	73444	73444	73444	73444	70187	64348
Adj. R^2	0.14	0.14	0.14	0.14	0.14	0.15
Nr. countries	83	83	83	83	73	65
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All	All	All
Country-level controls	All	All	All	All	All	All

Notes: This table presents the OLS coefficients for the Public Sector Corruption Index, bribery behavior, cultural variables (Hofstede, 2011), and their effects on firm sales growth. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 10: The role of economic preferences (Falk et al., 2018)

Dep. variable:	Growth of sales, per annum					
	(1)	(2)	(3)	(4)	(5)	(6)
PSCI	-0.174***	-0.189***	-0.199***	-0.188***	-0.194***	-0.173***
	(0.041)	(0.043)	(0.045)	(0.042)	(0.046)	(0.040)
Bribery share	-0.057	-0.076	-0.080	-0.085	-0.079	-0.081
	(0.099)	(0.090)	(0.097)	(0.097)	(0.096)	(0.098)
Non-zero Bribery	-0.006	-0.001	-0.001	-0.001	-0.001	-0.002
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Patience	0.091**					
	(0.037)					
Risk-taking		-0.013				
		(0.045)				
Positive reciprocity			0.027			
			(0.025)			
Negative reciprocity				-0.036		
				(0.030)		
Altruism					0.011	
					(0.024)	
Trust						-0.064**
						(0.032)
Observations	60579	60579	60579	60579	60579	60579
Adj. R^2	0.16	0.16	0.16	0.16	0.16	0.16
Nr. countries	57	57	57	57	57	57
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All	All	All
Country-level controls	All	All	All	All	All	All

Notes: This table presents the OLS coefficients for the Public Sector Corruption Index, bribery behavior, preferences Falk et al. (2018) and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 11: The role of religion, legal origin and institutions (Ashraf and Galor, 2013)

Dep. variable:	Growth of sales, per annum								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
PSCI	-0.144***	-0.142***	-0.114***	-0.145***	-0.148***	-0.150***	-0.111***	-0.208***	-0.109***
	(0.041)	(0.041)	(0.038)	(0.041)	(0.040)	(0.040)	(0.040)	(0.047)	(0.041)
Bribery share	-0.172*	-0.169*	-0.158*	-0.171*	-0.166*	-0.169*	-0.154	-0.139	-0.159
	(0.092)	(0.094)	(0.093)	(0.094)	(0.095)	(0.092)	(0.096)	(0.102)	(0.097)
Non-zero Bribery	0.006	0.006	0.004	0.005	0.005	0.005	0.006	-0.006	0.006
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.009)
Protestants	0.061								
	(0.069)								
Catholics		0.022							
		(0.020)							
Muslims			-0.054*						
			(0.032)						
British legal origin				0.014					
				(0.021)					
French legal origin					-0.009				
					(0.016)				
Socialist legal origin						-0.001			
						(0.018)			
Executive constraints							0.014**		
							(0.006)		
Social infrastructure								-0.006	
								(0.063)	
Democracy									0.079***
									(0.025)
Observations	84022	84621	84621	84621	84621	84621	83310	64550	83310
Adj. R^2	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Nr. countries	120	121	121	121	121	121	115	89	115
Sector-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All	All	All	All	All	All
Country-level controls	All	All	All	All	All	All	All	All	All

Notes: This table shows the OLS coefficients of Public Sector Corruption Index, bribery behavior, variables regarding religion, legal origin and institutions, and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country × survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 12: The role of institutional quality (Uberti, 2022)

Dep. variable:	Growth of sales, per annum			
	(1)	(2)	(3)	(4)
PSCI	-0.441***	-0.299**	-0.272*	-0.400**
	(0.145)	(0.125)	(0.144)	(0.162)
Bribery share	-0.200***	-0.199***	-0.199***	-0.200***
	(0.069)	(0.069)	(0.069)	(0.073)
Non-zero Bribery	0.009	0.009	0.009	0.007
	(0.006)	(0.006)	(0.006)	(0.006)
Quality of democracy	0.290***			
	(0.102)			
Regulatory quality		0.315***		
		(0.104)		
Property rights			0.015	
			(0.213)	
State capacity				0.116
				(0.096)
Observations	85609	85609	85609	84738
Adj. R^2	0.19	0.19	0.19	0.19
Nr. countries	124	124	124	124
Sector-Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All
Country-level controls	All	All	All	All

Notes: This table shows the OLS coefficients of Public Sector Corruption Index, bribery behavior, background institutional variables, and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country × survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 13: The role of knowledge (Delis et al., 2023)

Dep. variable:	Growth of sales, per annum	
	(1)	(2)
PSCI	-0.130***	-0.163***
	(0.040)	(0.034)
Bribery share	-0.146	-0.089
	(0.098)	(0.101)
Non-zero Bribery	0.002	-0.006
	(0.009)	(0.009)
Scientific articles	0.235*	
	(0.139)	
Years of schooling		0.014***
		(0.004)
Observations	79251	71216
Adj. R^2	0.13	0.13
Nr. countries	107	92
Sector-Year FE	Yes	Yes
Firm-level controls	All	All
Country-level controls	All	All

Notes: This table shows the OLS coefficients of the Public Sector Corruption Index, bribery behavior, knowledge-related variables, and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country × survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Table 14: The role of geography

Dep. variable:	Growth of sales, per annum			
	(1)	(2)	(3)	(4)
PSCI	-0.170***	-0.152***	-0.142***	-0.158***
	(0.042)	(0.039)	(0.038)	(0.041)
Bribery share	-0.175*	-0.172*	-0.134	-0.166*
	(0.092)	(0.094)	(0.091)	(0.092)
Non-zero Bribery	0.005	0.006	0.003	0.005
	(0.009)	(0.009)	(0.009)	(0.009)
Mean distance to nearest waterway	0.024*			
	(0.014)			
log(Arable land area)		0.015*		
		(0.008)		
log(Soil fertility)			0.052**	
			(0.025)	
log(Temperature)				-0.063**
				(0.030)
Observations	83954	84187	83297	84621
Adj. R^2	0.13	0.13	0.13	0.13
Nr. countries	114	121	112	121
Sector-Year FE	Yes	Yes	Yes	Yes
Firm-level controls	All	All	All	All
Country-level controls	All	All	All	All

Notes: This table shows the OLS coefficients of the Public Sector Corruption Index, bribery behavior, geography-related variables, and their effects on sales growth of firms. The analysis controls for firm-specific characteristics, including the logarithm of sales and employment from three years prior (expressed in US dollars), propensity to complain, exporter status, ownership type (state or foreign), and the logarithm of firm age. Additionally, it accounts for country-level factors such as the logarithm of GDP per capita, real GDP growth, and the logarithm of total population, all measured as lagged-period averages. Standard errors in parentheses are clustered at the country $\times$ survey year level. ***, **, and * denote statistical significance at 1%, 5% and 10% levels, respectively.