Journal of Corporate Finance 92 (2025) 102769

Contents lists available at ScienceDirect

Journal of Corporate Finance

journal homepage: www.elsevier.com/locate/jcorpfin

Anti-corruption and corporate investment: Evidence from financial disclosure laws☆

Wendi Huang [a,*], Ye Peng [b]

[a] Alliance Manchester Business School, Manchester University, United Kingdom
[b] The University of Hong Kong, Hong Kong

ARTICLE INFO

Editor: E Lyandres

JEL classification:
G31
H21
K29

Keywords:
Anti-corruption
Corporate investment rate
Corporate investment efficiency
Government subsidies

ABSTRACT

We investigate the impact of anti-corruption regulations on corporate investment by leveraging the implementation of global financial disclosure laws. Our findings reveal that, subsequent to the adoption of these laws, there is a reduction in the rate of corporate investment, alongside an enhancement in investment efficiency. This suggests that anti-corruption policies serve to curb firms' excessive investment, which is often fueled by government subsidies in corrupt environments. Our analysis provides valuable insights into the advantages of anti-corruption laws and carries significant policy implications.

1. Introduction

Corruption is typically defined as "the abuse of power by a public agent for personal gain" (Jain, 2001) or "the sale by government officials of government property for personal gain" (Shleifer and Vishny, 1993). It is considered a third major financial friction – alongside information asymmetry and agency problems – that distorts firms' investment behavior and leads to inefficiency (Stein, 2003). Corruption is theorized to be closely linked to adverse outcomes at multiple levels in economic and financial systems. For instance, it has been associated with the weakening of the state, predicting low investment and slow economic growth (Mauro, 1995). It is also linked to the distortion of government spending priorities (Mauro, 1998) and subsidies (Shleifer and Vishny, 1994), contributing to allocation inefficiencies (Murphy et al., 1991; Acemoglu and Verdier, 1998). Additionally, corruption introduces frictions in corporate governance (La Porta et al., 1999), which results in distortion of firm investment and innovation (Chen et al., 2011; Ellis et al., 2020).

Since the late 1990s, numerous country-wide anti-corruption campaigns have been launched at an accelerated pace to address and resolve the root causes of corruption. The mid-2000s saw a notable increase in the number of countries participating in these efforts, with a majority being high-income nations. This upward trend has also extended across the developing world, spanning diverse jurisdictions and regions. Consequently, there is growing interest in the effects of anti-corruption policies aimed at reducing

☆ We are grateful to Shiyang Huang, Ivan Indriawan, Tong Li, Tse-Chun Lin, Stefano Pegoraro, Huan Qiu, Cara Vansteenkiste, Hong Xiang, Yang You, Yiyuan Zhou, conference participants at New Zealand Finance Meeting, World Finance & Banking Symposium, Financial Markets and Corporate Governance Conference, Research Symposium on Finance and Economics and seminar participants at The University of Hong Kong for their valuable comments. We conducted this research while affiliated with The University of Hong Kong and would like to acknowledge its support during the data collection phase. All errors remain our own.

* Corresponding author.
E-mail addresses: wendi.huang@manchester.ac.uk (W. Huang), y2metis@connect.hku.hk (Y. Peng).

https://doi.org/10.1016/j.jcorpfin.2025.102769
Received 3 July 2024; Received in revised form 23 February 2025; Accepted 2 March 2025
Available online 19 March 2025

corruption's impact on financial markets, the macroeconomy, and firm-level outcomes. While some within-country studies document the benefits of anti-corruption initiatives,[1] global evidence on their effectiveness remains limited.

In this paper, we address this gap by examining the impact of anti-corruption regulations on corporate investment rates and efficiency on a global scale. Specifically, we use the implementation of financial disclosure laws in various countries as a natural experiment, analyzing changes in firms' investment levels and efficiency before and after these laws were introduced. In this context, financial disclosure refers to the mandatory reporting of income, assets, and business interests by public officials, as required by relevant laws and regulations.[2]

Using a Difference-in-Difference approach, we examine the effects of implementing global financial disclosure laws on corporate investment rates. Our findings indicate that these laws lead to a significant reduction in corporate investment rates. To ensure the robustness of our results, we control for various firm-level characteristics, such as firm size, asset tangibility, profitability, Tobin's Q, book leverage, cash holdings, and the broader economic environment (including GDP level and growth). Additionally, we incorporate fixed effects to control non-parametrically for industry-year-specific shocks and firm-specific, time-invariant characteristics. Our analysis reveals a substantial economic impact, with corporate investment rates decreasing by 1.3%, equivalent to a 26% reduction relative to the sample mean.[3]

Two opposing mechanisms may explain the decrease in firms' investment rates. The under-investment mechanism suggests that financial disclosure laws limit available funds, making firms less able to invest and less responsive to new opportunities. This financial constraint leads to a decline in corporate investment efficiency. On the other hand, the over-investment mechanism argues that before the laws, inefficient government budget allocations, such as subsidies, led to excessive investment that did not align with firm-level needs. After the laws, investment efficiency improves as these inefficiencies are reduced, allowing firms to allocate resources more effectively.

To test these two mechanisms, we examine the change in corporate investment efficiency following the adoption of global financial disclosure laws. We follow previous studies (see Richardson (2006) among others) and estimate the deviation of corporate investment rates from the optimal capital allocation line. Our findings indicate a significant improvement in investment efficiency after the laws are adopted. We also obtain consistent results when measuring corporate investment efficiency by analyzing the sensitivity of investment to Tobin's Q or sales growth. In line with the over-investment mechanism, we observe a decrease in firms' tendency to over-invest after the passage of financial disclosure laws.

We then conduct various cross-sectional analyses to validate the idea that anti-corruption laws help mitigate over-investment caused by inefficient government budget allocation in a corrupt environment. First, we present additional evidence suggesting that the under-investment mechanism does not explain the decline in corporate investment. Specifically, we show that the negative impact of anti-corruption policies on corporate investment rates does not intensify in countries with high political and economic uncertainty or in firms facing significant financial constraints. Second, we further support the over-investment mechanism by demonstrating that the harmful effect of anti-corruption policies on corporate investment rates is more pronounced in R&D-intensive firms, countries with substantial government subsidies, or firms that act as government contractors.

However, our study is not immune to endogeneity concerns. To address this, we conduct several tests to validate our conclusions. First, we show that our sample satisfies the parallel trends assumption. This assumption requires that, in the absence of anti-corruption laws, the average change in investment rates would be the same for both the treatment and control groups. In our sample, the staggered passage of anti-corruption laws across different years and countries means that firms are in both the treatment and control groups at different times. This reduces concerns about significant differences between the two groups.

To further validate our findings, we use propensity score matching to ensure that observable characteristics between treated and control firms are comparable. This produces consistent evidence supporting our results. Second, we address concerns of reverse causality by examining the timing of changes in corporate investment rates. We find that the decrease in investment rates occurs only after the implementation of anti-corruption laws in our main samples. This result remains robust even after controlling for country-year trends in investment rates and accounting for confounding factors that vary at the country-year level.

Furthermore, our findings remain valid when using alternative estimators, measures of corporate investment, different samples, and adjusted legal classifications. Specifically, we measure corporate investment by scaling capital expenditures against the firm's net Property, Plant, and Equipment (PP&E) or its sales figures. We also directly employ the logarithm of capital expenditures. Additionally, we test with mainland China as an alternative sample and adjust legal classifications accordingly. Overall, our research demonstrates that our conclusions remain robust across different measures, samples, and legal classifications.

Our study makes two significant contributions. First, to the best of our knowledge, it is the first to investigate the impact of anti-corruption policies on firm-level outcomes in an international context, providing global empirical evidence. While most existing studies focus on within-country analyses (e.g., Zhang et al. (2019)), our research examines how anti-corruption policies influence corporate investment across different countries. This approach enhances the external validity of prior findings on the local consequences of such policies.

Second, our paper contributes to the literature on corporate investment. Prior research has identified various frictions that impede corporate investment, including financial constraints (Stein, 2003; Almeida and Campello, 2007), policy uncertainty (Gulen

[1] See Fisman and Svensson (2007), Collins et al. (2009), Athanasouli et al. (2012), Nguyen and Van Dijk (2012), Smith (2016), Lee et al. (2020) and Brown et al. (2021) among others.

[2] We categorize these laws into four groups, with the term "financial disclosure laws" encompassing laws from any of these groups rather than referring to a specific one.

[3] This magnitude reduces to 10% after conducting the staggered treatment correction from Gardner (2022).

and Ion, 2016), government intervention (Zhang et al., 2019), and CEO overconfidence (Malmendier and Tate, 2005). Our study empirically demonstrates that the efficiency of corporate investment increases following the enactment of anti-corruption laws, providing evidence that corruption serves as a third financial friction, as suggested by Stein (2003). Importantly, our findings are not limited to a single country but rather hold across a diverse range of countries. Therefore, we conclude that corruption has indeed hindered corporate investment and that anti-corruption laws effectively reduce firms' tendency to over-invest.

The rest of the paper is organized as follows. Section 3 discusses the institutional background and describes the data. Section 4 introduces the empirical models and presents the results. Section 5 provides a rich set of robustness tests and alternative measures. Section 6 concludes. Detailed data descriptions and alternative specifications are provided in Appendix A.

2. Literature review

2.1. Corruption and corporate investment

This paper belongs to a growing literature studying the negative effect of government intervention and corruption on corporate investment. Chen et al. (2011) find that in China, government intervention in state-owned enterprises (SOEs) results in investment inefficiency. Xu and Yano (2017) show that the anti-corruption campaign in China significantly promotes firm innovation. Zhang et al. (2019) finds that the government's anti-corruption efforts have effectively curbed the excessive investment behavior of government-subsidized enterprises. Kong et al. (2020) document that the anti-corruption campaign in China can substantially enhance firm productivity by improving investment efficiency and innovation. Huang et al. (2023) demonstrate that the anti-corruption campaign in China increases cross-region takeover activities, leading to higher bidder returns and post-acquisition performance.

A significant body of research also examines the impact of corruption on foreign direct investment (FDI). Studies by Wei (2000), Drabek and Payne (2002), Javorcik and Wei (2002), Al-Sadig (2009), and Brada et al. (2019) focus on how host-country corruption affects incoming FDI. Generally, they find that corruption deters FDI, as multinational corporations (MNCs) face exploitation risks from both government and private actors, limited asset protection (including intellectual property), and high costs from complex transactions. These negative conditions increase expenses for firms, ultimately lowering their productivity and profitability.

Our paper extends the literature on anti-corruption and corporate investment by providing critical external validity. While most studies focus on within-country analyses, we examine the effects of global financial disclosure laws across multiple countries, demonstrating that anti-corruption policies impact corporate investment consistently across diverse regulatory settings. This broader approach enhances the generalizability of our findings.

Our study also broadens the understanding of anti-corruption policies' effects on corporate investment beyond the FDI literature by focusing on firm-level responses rather than country-level trends. While FDI research primarily examines how corruption in host countries affects multinational corporations facing exploitation risks and weak legal protections, our analysis explores how domestic firms adapt to anti-corruption measures within their own countries. This approach provides causal evidence on individual firm behavior, addressing issues often overlooked in FDI studies. We also find that anti-corruption policies curb overinvestment driven by government subsidies in corrupt settings—an underexplored mechanism in FDI literature. By highlighting how these policies enhance investment efficiency across varied firm characteristics and regulatory contexts, our study provides valuable insights for policymakers and enriches discussions on governance and investment strategy.

2.2. Corruption and firm performance

This paper also belongs to a more broad strand of literature on corruption and firm performance, where most papers are within-country studies. Fisman and Svensson (2007) utilize a unique dataset to estimate firms' bribe payments in Uganda and find that bribery rates are negatively associated with firm growth. Collins et al. (2009) use executive survey data in India to demonstrate that social ties between executives and government officials increase the likelihood of firms engaging in corrupt practices. Nguyen and Van Dijk (2012) conduct a firm-level analysis and find that corruption impedes the growth of private sector firms but not state-owned enterprises. The literature on this topic is not limited to developing economies, as Athanasouli et al. (2012) examine the impact of corruption on firm performance in Greece and find that large firms are less likely to engage in corrupt practices than small and medium-sized enterprises. Using data from the US Department of Justice, Smith (2016) observes an upward-leverage and downward-liquidity pattern for firms operating in more corrupt areas, suggesting a strategy to limit the expropriation of corrupt government officials. Similarly, Brown et al. (2021) analyze the mechanisms through which firms can mitigate the negative relationship between corruption and firm value, finding that firm values decline less in high-rent product markets subject to external monitoring by state governments and under surveillance induced by disclosure transparency.

There are also papers documenting the beneficial impact of anti-corruption policies on firm behavior, albeit limited to within-country effects. For instance, Colonnelli and Prem (2017) leverages anti-corruption audits in Brazil and reveals that corrupt firms tend to invest more and gain better access to finance. Colonnelli and Prem (2020) further establish that politically connected firms suffer adverse consequences following anti-corruption audits, while the number of firms concentrated in sectors heavily reliant on government relationships increases. Similarly, Giannetti et al. (2021) exploits China's anti-corruption campaign and establishes a negative correlation between corruption and firm performance through the channel of more efficient allocation of labor and capital. Giannetti et al. (2021) finds that firms operating in previously corrupt environments now exhibit higher sales growth,

greater productivity gains, and lower cost of debt. Finally, Zeume (2017), employing the passage of the UK Bribery Act 2010, finds that UK firms operating in high-corruption regions of the world experience a decline in firm value after the Act's passage. More importantly, Zeume (2017) finds that the Act has unintended positive effects on non-UK unregulated peers, underscoring the importance of policymakers' attention to the global consequences of anti-corruption regulations.

3. Data

3.1. Adoption of financial disclosure laws

Financial disclosure refers to the mandatory reporting of income, assets, and business interests by public officials, as required by laws and regulations. This practice is widely seen as an effective tool for enforcing anti-corruption policies. At a global level, the enactment of financial disclosure laws across countries can be viewed as an exogenous shock that influences corporate investment decisions at the firm level.[4]

We utilize the World Bank's financial disclosure law library, which compiles legal documents containing anti-corruption policies from over 1000 laws across 176 jurisdictions. In cases where English is not the official language, the World Bank provides translations into English, along with links to the original versions of the official legal documents. According to the World Bank, legally binding texts are provided at the national level and typically include documents such as constitutions, laws, acts, regulations, decrees, and rules. However, these may vary across countries.

Our focus is on examining how anti-corruption policies influence corporate investment behavior, so we limit our analysis to laws that include financial disclosure and specify which categories of public officials are required to submit disclosures. To determine the enforcement year of each law, we categorize them into four sub-groups for each country: (1) anti-corruption laws, (2) asset declaration laws, (3) conflict of interest laws, and (4) house of representatives codes. A detailed explanation of each group is provided in Appendix A.

The laws within these groups may vary in nomenclature but share the common goal of combating corruption through enhanced disclosure of public officials' assets and business interests. In our primary analysis, we use the earliest adoption year among these four law groups, where applicable. We also include laws from group (4) that apply to select public officials, such as parliament members. In robustness checks, we exclude these laws and use the earliest adoption year among the first three groups, where possible.

To strengthen the credibility of our firm-level analyses, we first investigate whether financial disclosure laws can reduce corruption at the country level. Specifically, we examine whether a country's perceived corruption improves after adopting such laws. We use data from the World Bank's "Control of Corruption" category in the Worldwide Governance Indicators[5] and the Corruption Perception Index compiled by Transparency International,[6] covering the period from 1996 to 2019. In both indices, a higher score indicates lower corruption. We then rank countries based on these indices to facilitate cross-country and temporal comparisons. Finally, we conduct a Difference-in-Difference analysis and present the results in Table 1.

In Table 1, *Anti Corrupt* is a binary variable indicating whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year t, regardless of when the law was passed. The dependent variable, *Less Corrupt*, is a binary variable indicating whether a country has a corruption index ranking above the median. In Columns 1 and 2, the corruption index used is the "Control of Corruption" category from the World Bank. The results indicate a statistically significant and positive coefficient for *Anti Corrupt*, suggesting that countries that adopt financial disclosure laws are more likely to rank highly in the control of corruption. This finding remains significant even after controlling for country GDP per capita and GDP growth in Column 2. In Columns 3 and 4, we use the Corruption Perception Index constructed by Transparency International and find similar results. The observed increase in the likelihood of being less corrupt ranges from 5% (control of corruption) to 9% (perceived level of corruption), indicating a significant economic impact. These findings suggest that financial disclosure laws can effectively combat corruption at the country level.

3.2. Firm and country characteristics

We use firm-level financial data from the Compustat Global Database, which provides detailed information on the geographic location and financial characteristics of firms from 1987 to 2019. To better account for variations across countries, we supplement this data with country-level information from the World Bank. We identify each firm's headquarter country using the Compustat Global Database, then merge this information with data from the World Bank's financial disclosure law library.

Due to the Compustat Global Database starting in 1987, our primary sample excludes countries that implemented financial disclosure laws before 1988. This exclusion is aimed at enhancing the identification of treatment effects by focusing on firms from countries that introduced anti-corruption laws during the sample period. Including firms from countries with pre-existing legislation might confound our results, as it would blur the distinction between the impact of laws introduced during the sample period and those enacted earlier. Additionally, always-treated firms could disrupt the comparability of our treatment and control groups, given differences in their longstanding legal and institutional frameworks. Additionally, we exclude Mainland China from our primary

[4] Our sample includes regions like Hong Kong Special Administrative Region of the People's Republic of China, and for simplicity, throughout this paper, we use "country" and "country and region" interchangeably.

[5] https://databank.worldbank.org/source/worldwide-governance-indicators.

[6] https://www.transparency.org/en/cpi/2021.

Table 1
Adoption of financial disclosure laws and country corruption index.

	Dependent variable:			
	Less corrupt			
	(1)	(2)	(3)	(4)
Anti corrupt	0.053**	0.051**	0.084**	0.090**
	(0.025)	(0.026)	(0.042)	(0.042)
Log(GDP)_{t-1}		0.002		−0.002
		(0.001)		(0.002)
GDP Growth_{t-1}		0.026		−0.007
		(0.045)		(0.095)
Year FE?	y	y	y	y
Country FE?	y	y	y	y
Observations	4206	4019	3487	3386
R^2	0.824	0.822	0.783	0.781
Adjusted R^2	0.815	0.812	0.769	0.767

This table shows how the adoption of financial disclosure laws affects the country-level corruption index. *Anti Corrupt* is a dummy variable indicating whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year t, regardless of when the law was passed. The depend variable *Less Corrupt* is a dummy variable indicating whether a country has an above-median rank in the corruption index. In Column 1 and Column 2, the corruption index is defined as "Control of Corruption" category from Worldwide Governance Indicators constructed by the World Bank. In Column 3 and Column 4,the Corruption Perception Index is constructed by Transparency International. Country-level GDP per capita (in 2015 US dollars) and GDP growth (%) data are from World Bank. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

sample, as it has not yet enacted financial disclosure laws, despite conducting significant anti-corruption campaigns since 2012, which are well-documented in the literature (Kong et al., 2020; Chen et al., 2011; Zhang et al., 2019).

Our final sample includes 343,204 firm-year observations, representing 24,490 unique firms across 91 countries or regions. Of these, 235,566 firm-year observations (15,985 unique firms) are classified within the treatment group, which consists of 48 countries or regions that have enacted anti-corruption laws. This dataset provides broad geographical coverage and substantial variation across countries.

Table 2 presents summary statistics. In Panel A, we present summary statistics of the primary variables used in the analysis. The corporate investment rate, denoted as *Inv*, is computed as capital expenditures divided by the previous year's total assets. The mean and standard deviation of *Inv* are 0.05 and 0.077, respectively. The variable *Anti Corrupt* is a binary indicator that indicates whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year t, regardless of when the law was passed. The sample mean of *Anti Corrupt* reveals that 62.4% of firm-year observations in our main sample belong to the treatment group, i.e., the firms headquartered in countries that have passed an anti-corruption law. The remaining variables are control variables, measured one year prior to the corporate investment rate. Continuous variables are winsorized at their 1st and 99th percentiles. In Panel B, we provide summary statistics at the country or regional level. To give a clearer view of the dataset, we list the top 20 countries or regions by the number of firm-year observations in the main sample, as presented in Table 3. Other countries or regions are aggregated under the "Others" category, and are presented in Table B.1. Japan has the highest number of observations, with 73,476 observations, accounting for 21.4% of the sample size, and 4214 distinct firms, representing 17.33% of the total number of firms. India ranks second in terms of the number of observations, followed by Hong Kong, Malaysia, the Republic of Korea, and Germany.

Column 4 indicates whether each country implemented a financial disclosure law during the sample period, providing insight into the legislative landscape over time. Among the top 20 countries, 13 (or 65%) enacted financial disclosure laws, which is closely aligned with the overall treatment rate of 62.4% noted in Panel A. This consistency suggests that the assignment of countries to the treatment group is not influenced by the number of firm-year observations or firms within each country. Column 5 presents the average corporate investment rate of each country. Among the top 20 countries, the rate ranges from 0.026 (Japan) to 0.095 (Norway).

4. Empirical results

4.1. Anti-corruption and corporate investment rates

We adopt a Difference-in-Differences research design to examine the relationship between the enactment of anti-corruption legislation and the investment rate at the firm-year level. To achieve this, we estimate a panel regression model as follows:

$$Inv_{i,t} = \beta Anti\ Corrupt_{j,t} + \phi X_{i,t-1} + \gamma C_{j,t-1} + \alpha_i + \alpha_{k,t} + \varepsilon_{i,t} \quad (1)$$

where $Inv_{i,t}$ is a specific measure of firm investment rate at firm i and year t, and $Anti\ Corrupt_{j,t}$ is an indicator variable for whether the country j in which the firm i is headquartered has passed an anti-corrupt law (financial disclosure law) as of year t. We control

Table 2
Summary statistics.

Panel A: Summary statistics of main variables

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Inv	343,204	0.050	0.077	0.000	0.005	0.061	0.480
Anti corrupt	343,204	0.624	0.484	0	0	1	1
Size	343,204	7.907	3.195	1.116	5.497	10.281	15.589
Tangibility	343,204	0.310	0.220	0.000	0.130	0.455	0.885
Profitability	343,204	0.046	0.131	−0.690	0.017	0.102	0.343
Tobin's Q	343,204	1.531	1.748	0.422	0.883	1.464	14.588
Book leverage	343,204	0.246	0.212	0.000	0.061	0.377	1.002
Cash holding	343,204	0.140	0.150	0.0003	0.032	0.194	0.748
Log(GDP)	343,204	9.340	1.364	6.610	8.230	10.421	11.234
GDP Growth(%)	343,204	2.544	2.739	−6.028	0.900	4.352	7.856

This panel presents the summary statistics of the main variables used in the analysis. *Inv* is capital expenditures scaled by last year's total assets, the outcome variable used in the regression analysis. *Anti Corrupt* is a dummy variable indicating whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year t, regardless of when the law was passed. All other variables are control variables one year before *Inv* and are defined as follows (Compustat items are indicated in parentheses). *Size* is logarithm of firm total assets (*at*) in constant 2015 dollars. *Tangibility* is Net Property, Plant and Equipment (*ppent*) scaled by firm total assets (*at*). *Profitability* is the sum of Income Before Extraordinary Items (*ib*) and Depreciation and Amortization (*dp*) scaled by firm total assets (*at*). *Tobin's Q* is the sum of book value of liability (*at - ceq*) and market value of equity (calculated from Compustat Global) scaled by firm total assets (*at*). *Book Leverage* is the sum of Debt in Current Liabilities (*dlc*) and Long-Term Debt (*dltt*) scaled by firm total assets (*at*). *Cash Holding* is Cash and Short-Term Investments (*che*) scaled by firm total assets (*at*). *Log(GDP)* is the logarithm of country GDP per capita in constant 2015 U.S. dollars. *GDP Growth* is the percentage change in a country's GDP per capita. For each continuous variable, we winsorize it at 1% and show its number of observations, sample average, standard deviation, minimum value, 25th percentile, 75th percentile, and maximum value.

Panel B: Summary statistics by country or region

Country or region	# Observations	# Firms	Treated	Average corporate investment rate
Japan	73,476	4214	1	0.026
India	56,422	3535	1	0.069
Hong Kong	18,724	1350	1	0.047
Malaysia	17,896	1149	0	0.048
Republic of Korea	17,640	1885	0	0.054
Germany	14,614	1050	0	0.048
France	14,594	1115	0	0.042
Thailand	9485	657	1	0.062
Poland	8358	762	1	0.073
Indonesia	7122	531	1	0.074
Brazil	5452	352	1	0.055
Israel	5372	434	0	0.041
South Africa	5372	400	1	0.067
Pakistan	5121	339	0	0.070
Italy	5062	461	1	0.038
Switzerland	4658	287	0	0.044
Turkey	4338	331	1	0.054
Norway	4194	402	1	0.095
Vietnam	4104	462	1	0.066
Greece	3659	254	1	0.036
Others	57,541	4506	NA	0.067

This panel presents the summary statistics of the countries or regions in the analysis. For demonstration purposes, we show the top 20 countries ranked by the number of observations in the main panel used in Table 3 and "Others," which consist of the rest of the countries in the panel. column 1 presents the name of the country or region, and columns 2 and 3 present the number of observations and firms in the panel separately. column 4 indicates whether the country passed financial disclosure law during the sample period, and Column 5 shows the average corporate investment rate.

for a set of time-varying firm characteristics, denoted as $X_{i,t-1}$, which include firm size, tangibility, profitability, Tobin's Q, book leverage, and cash holding. These variables are commonly found in the literature and are expected to influence firm investment decisions. Additionally, we account for country-level characteristics, denoted as $C_{j,t-1}$, such as GDP level and growth, to ensure that country-specific economic conditions do not confound our main findings.

In all model specifications, we include firm fixed effect α_i and industry-year joint fixed effect $\alpha_{k,t}$.[7] The firm fixed effect α_i serves to account for time-invariant omitted firm characteristics, which ensures that our estimates of β reflect not just the cross-sectional correlations but also the average within-firm changes in investment rate over time. Therefore, the firm fixed effects absorb any time-invariant firm, industry, and country characteristics. The industry-year joint fixed effects $\alpha_{k,t}$ account for transitory industry-wide factors that might potentially affect the firm's investment rate.

[7] We also control for the country-year trend that difference out all confounding factors that vary at the country-year level in our cross-sectional tests.

Table 3
Anti-corruption and corporate investment rate.

	Dependent variable:			
	Inv_t			
	(1)	(2)	(3)	(4)
Anti corrupt	−0.013**	−0.015***	−0.014***	−0.014***
	(0.005)	(0.005)	(0.005)	(0.004)
$Size_{t-1}$		−0.008***	−0.008***	−0.008***
		(0.002)	(0.002)	(0.002)
$Tangibility_{t-1}$		0.005	0.019***	0.017***
		(0.005)	(0.006)	(0.006)
$Profitability_{t-1}$		0.071***	0.058***	0.056***
		(0.012)	(0.009)	(0.010)
Tobin's Q_{t-1}		0.002***	0.002***	0.002***
		(0.001)	(0.001)	(0.001)
Book $leverage_{t-1}$			−0.031***	−0.030***
			(0.004)	(0.004)
Cash $holding_{t-1}$			0.031***	0.032***
			(0.008)	(0.008)
$Log(GDP)_{t-1}$				−0.037***
				(0.010)
GDP $Growth_{t-1}$				0.001***
				(0.0003)
Industry × Year FE?	y	y	y	y
Firm FE?	y	y	y	y
Observations	343,204	343,204	343,204	343,204
R^2	0.354	0.370	0.374	0.376
Adjusted R^2	0.300	0.317	0.322	0.324

This table presents the effect of anti-corruption on corporate investment rate (*Inv*), which is measured by capital expenditures scaled by last year's total assets. *Anti Corrupt* is a dummy variable indicating whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year t, regardless of when the law was passed. All variables are defined in Table 2. Industry fixed effects are defined at the 2-digit SIC level. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

We adjust the estimated standard errors in all regression analyses to account for heteroskedasticity and clustering at the country level.[8] Given that the variability in anti-corruption laws is at the country level, this clustering approach addresses the correlations in error terms within countries and firms over time.

The findings of the regression analysis are presented in Table 3. In Column 1, we include solely a binary variable *Anti Corrupt* that indicates whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year *t*, regardless of when the law was passed. The negative coefficient is both statistically and economically significant, indicating that the corporate investment rate declines by 1.3 percentage points following the law enactment. This reduction represents a relative decline in investment rates of 26% (=0.013/0.050) compared to the sample mean, which is comparable to existing studies on corporate investment, such as Almeida and Campello (2007) and Kim and Kung (2017).

In Column 2, we incorporate various firm characteristics, such as size, tangibility, profitability, and Tobin's Q, as control variables. Interestingly, the coefficient of *Anti Corrupt* exhibits a significant increase in both statistical and economic significance. Specifically, we observe a 1% level of significance and a 15.38% increase relative to the first column. In the subsequent columns, we introduce additional control variables, including book leverage, cash holdings, country GDP, and GDP growth. However, the statistical significance of the law's passage remains unaffected, although there is a slight reduction in economic significance.[9]

Overall, the aforementioned findings indicate a negative correlation between anti-corruption measures and corporate investment rates. This correlation remains consistent even after accounting for various firm-specific characteristics and the economic conditions of the country, which could potentially influence investment decisions made by corporations.

4.2. Anti-corruption and investment efficiency

After presenting our baseline results, we now turn to examine the underlying mechanisms that may explain the observed decrease in corporate investment rates following the passage of anti-corruption laws. We propose several potential mechanisms to account for this phenomenon and will outline these mechanisms before discussing our preferred hypothesis.

One potential mechanism is that firms may under-invest due to a perceived deterioration in the economic environment, which could result from the introduction of anti-corruption measures. This perception may lead to financial constraints and a shortage

[8] In untabulated analysis, we find that our results are unchanged if we cluster standard deviations at both country and year level.
[9] In the untabulated test, we further control country-specific time trends and our results still hold.

of funds, preventing firms from pursuing profitable projects they might have undertaken with the support of government officials (Paravisini, 2008). Additionally, the perception of increased political risk and business uncertainty stemming from these laws could reduce firms' responsiveness to demand shocks or changes in economic policies (Bloom et al., 2007).

Conversely, the decrease in the investment rate could indicate a correction of prior over-investment trends. In the absence of anti-corruption measures, firms may engage in excessive investment fueled by generous government funding and subsidies (Zhang et al., 2019). Thus, the implementation of anti-corruption policies might serve to curb such over-investment, leading to a negative correlation between the reduction in the firm's investment rate and the enactment of these laws.

While both mechanisms suggest a decrease in the investment rate, a key difference lies in the change in investment efficiency. The Q theory of investment posits an inverted U-shaped relationship between investment rate and efficiency, where there is an optimal investment level that maximizes corporate efficiency. By examining changes in investment efficiency, we can assess whether the reduction in investment indicates under-investment or a correction of prior over-investment in a corrupt environment. Specifically, if we observe an improvement in corporate investment efficiency alongside a decline in the investment rate, it suggests that the original investment level exceeded the optimal level, leading to over-investment before the enactment of anti-corruption laws. Therefore, the reduction in corporate investment following the implementation of these laws signals progress in addressing over-investment.

To test these two opposing mechanisms, we next examine the impact of anti-corruption regulations on corporate investment efficiency.

We first provide direct evidence by building upon prior research (Richardson, 2006; Zhao et al., 2013; Harford et al., 2017) and concurrently measuring investment efficiency, as well as underinvestment and overinvestment tendencies. Our approach involves estimating investment residuals using the benchmark-investment regression outlined below:

$$\begin{aligned} Inv_{i,t} = {} & \beta_1 Size_{i,t-1} + \beta_2 Profitability_{i,t-1} + \beta_3 Tobin'sQ_{i,t-1} + \beta_4 BookLeverage_{i,t-1} + \\ & \beta_5 CashHolding_{i,t-1} + \beta_6 Inv_{i,t-1} + \beta_7 StockReturn_{i,t-1} + \alpha_t + \alpha_k + \alpha_j + \varepsilon_{i,t} \end{aligned} \tag{2}$$

where the outcome variable $Inv_{i,t}$ refers to investment rate by firm i in year t. To address potential confounding factors, we control for firm-specific characteristics, including size, profitability, Tobin's Q, book leverage, cash holdings, previous year's investment rate, and annual stock returns, as explanatory variables.[10] Additionally, we include year fixed effects (α_t), industry fixed effects (α_k), and country fixed effects (α_j) to account for time-varying and cross-sectional heterogeneity. We require a minimum of 100 trading days per stock year to ensure the validity of stock return data.

Next, we use the residuals from the regression analysis of benchmark investment to measure a firm's deviation from its expected or benchmark investment level. These residuals help categorize inefficiencies in a company's investment: a firm is considered to be under-investing if it has a negative residual, and over-investing if it has a positive residual. Additionally, the magnitude of the residual indicates the efficiency of capital allocation. A larger residual suggests a greater deviation from the benchmark investment level, implying lower capital allocation efficiency.

Table 4 presents the results. Column 1 shows that the coefficient of *Anti Corrupt* is negative and statistically significant at the 5% level, suggesting a decrease in the estimated investment residual following the enactment of such laws. Moreover, in Column 2, where the dependent variable is the absolute value of the estimated investment residual, the negative and statistically significant coefficient implies an increase in capital allocation efficiency. Similarly, in Column 3, the negative and statistically significant coefficient points to a significant reduction in over-investment tendency after the implementation of financial disclosure laws. The economic significance of this effect is also noteworthy, as there is a substantial 10.3% decrease in over-investment tendency following the passage of such laws.

To further substantiate the impact of financial disclosure laws on investment efficiency, we adopt a methodology utilized in previous studies (e.g., Bai et al. (2020)) and define investment efficiency as the responsiveness of corporate investment rate to investment opportunities. We construct two measures of investment opportunities: Tobin's Q and annual sales growth. Table B.2 presents the findings, where the specifications are mostly consistent with Column 4 of Table 3, albeit with the inclusion of country-year joint fixed effects in Columns 2 and 4. The positive coefficients of the interaction term between the "Anti Corrupt" variable and investment opportunities indicate that investment efficiency improves following the enactment of anti-corruption laws (i.e., financial disclosure laws). These results hold true regardless of the measure of investment opportunity used, and are robust to the inclusion of country-year joint fixed effects. Notably, the effect size is marginally larger when Tobin's Q is employed as a measure of investment opportunity (0.3%).

Overall, the aforementioned analyses demonstrate that the implementation of anti-corruption legislation leads to an enhancement in corporate investment efficiency. Furthermore, the findings suggest that firms tend to engage in excessive investment activities prior to the enactment of financial disclosure regulations, and that the adoption of such laws can effectively curb such practices.

4.3. Cross-sectional variation in firm and country characteristics

To further validate our findings in Tables 3 and 4, we leverage cross-sectional variation in industry and country characteristics to estimate Difference-in-Difference-in-Differences (DDD) regression models. These tests are essential for identifying which industries and firms are most affected by the adoption of anti-corruption laws. The DDD estimator helps mitigate concerns about unobserved

[10] In untabulated analysis, we also include country-level GDP and GDP growth as additional explanatory variables and find similar results.

Table 4
Anti-corruption and investment efficiency.

	Dependent variable:		
	Inv_Residual	Abs(Inv_Residual)	I(Inv_Residual > 0)
	(1)	(2)	(3)
Anti corrupt	−0.007**	−0.005***	−0.103***
	(0.003)	(0.002)	(0.038)
$Size_{t-1}$	−0.006***	−0.002***	−0.036***
	(0.001)	(0.001)	(0.006)
$Tangibility_{t-1}$	−0.020***	0.006**	0.021
	(0.003)	(0.003)	(0.024)
$Profitability_{t-1}$	−0.025***	0.029***	−0.439***
	(0.006)	(0.005)	(0.073)
Tobin's Q_{t-1}	−0.0001	0.002***	0.001
	(0.0003)	(0.0002)	(0.004)
Book $leverage_{t-1}$	−0.026***	−0.011***	−0.231***
	(0.003)	(0.001)	(0.017)
Cash $holding_{t-1}$	0.014***	0.015***	0.128***
	(0.002)	(0.002)	(0.020)
$Log(GDP)_{t-1}$	−0.019***	−0.012***	−0.242***
	(0.004)	(0.004)	(0.077)
GDP $Growth_{t-1}$	0.001**	0.001***	0.009***
	(0.0002)	(0.0001)	(0.002)
Industry × Year FE?	y	y	y
Firm FE?	y	y	y
Observations	303,324	303,324	303,324
R^2	0.187	0.313	0.257
Adjusted R^2	0.112	0.251	0.190

This table presents the effect of anti-corruption on investment efficiency, which is defined as the deviation between the current investment rate and the expected investment rate (residual estimated from Eq. (2)). In Column 1, the outcome variable is the investment residual estimated from Eq. (2). In Column 2, the outcome variable is the absolute value of investment residual, with a higher value indicating less capital allocation inefficiency. In Column 3, the outcome variable is a dummy variable indicating overinvestment tendency, which is defined as having greater than 0 investment residual. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

factors or trends that might affect investment rates differently for firms headquartered in countries that adopt anti-corruption laws, compared to those in countries that do not.

The initial set of cross-sectional tests examines firm characteristics. The results are presented in Table 5. Column 1 presents the results for innovation firms, which are defined as those with more intensive R&D expenses. As shown in Column 1, the negative effect of anti-corruption on the corporate investment rate is attenuated for innovation firms. This finding is in line with expectations, as it suggests that overinvestment behavior is less of a concern for firms that require significant funds for their innovation projects.

In Column 2, we interact *Anti Corrupt* with the dummy variable *Has Contract*, which indicates whether the firm has obtained government procurement contracts in the previous year. We were able to obtain government procurement data from TenderAlpha since 2010 from 35 countries in our sample. Although the number of observations decreased significantly, we find a negative and statistically significant coefficient, indicating that the decrease in the corporate investment rate is much stronger for firms that are government contractors. Specifically, the decrease for government contractors (1.2%) is twice as much as that for other firms (0.6%). This result is consistent with the channel that firms over-invest when they receive excessive resources from the government, particularly in corrupt government environments.

The second set of cross-sectional tests investigates whether the implementation of anti-corruption laws has a greater impact on firms in countries with higher levels of government subsidies or political and economic uncertainty. In Column 3, we introduce an interaction term between *Anti Corrupt* and *High Subsidy*, which indicates whether the government subsidies measure is above the median value. We obtain data on government subsidies from the World Bank (Subsidies and other transfers as a percentage of government expenses).[11] This data is sourced from the International Monetary Fund, Government Finance Statistics Yearbook, National Ministries of Finance or Treasury, and the OECD Government Finance Statistics for relevant countries. As shown in Column 3, although the number of observations decreases slightly due to missing subsidy data, the coefficient is negative and statistically significant at a 5% level. This suggests that the negative effect of anti-corruption measures on corporate investment rates is more pronounced for firms receiving higher levels of government subsidies. This finding is consistent with the results from Column 2 and supports the overinvestment channel. In Column 4, we introduce an interaction term between the variable *Anti Corrupt* and *High Uncertainty*, which indicates whether the country's "Uncertainty Index" is above the median value. This index, sourced from Ahir et al. (2018), captures both short-term and long-term economic and political uncertainties. Although we observe a negative coefficient in Column 4, it is not statistically significant. This result is inconsistent with the underinvestment mechanism.

[11] https://data.worldbank.org/indicator/GC.XPN.TRFT.ZS.

Table 5
Cross-sectional variation of corporate investment rate.

	Dependent variable:			
	Inv_t			
	(1)	(2)	(3)	(4)
Anti corrupt	−0.015***	−0.006**	−0.008***	−0.013***
	(0.005)	(0.003)	(0.002)	(0.004)
Anti corrupt × R&D Firm	0.009***			
	(0.002)			
Anti corrupt × Has contract		−0.006**		
		(0.003)		
Anti corrupt × High subsidy			−0.004***	
			(0.001)	
Anti corrupt × High uncertainty				−0.001
				(0.002)
R&D Firm	−0.0005			
	(0.001)			
Has contract		0.004*		
		(0.002)		
High subsidy			−0.0003	
			(0.001)	
High uncertainty				−0.0003
				(0.001)
Control Variables?	y	y	y	y
Industry × Year FE?	y	y	y	y
Firm FE?	y	y	y	y
Observations	343,204	80,506	217,172	339,754
R^2	0.377	0.386	0.378	0.375
Adjusted R^2	0.325	0.329	0.318	0.324

This table presents the cross-sectional variation results for our baseline finding presented in Table 3. We interact the dummy variable *Anti Corrupt* with several indicator variables. *Manufacturing* indicates if the firm is in the manufacturing industry (2-digit SIC codes range from 20 to 39). *R&D Firm* indicates if the firm has R&D expenses in any year, and if they are missing, we treat them as 0. *Has Contract* indicates if the firm has a government procurement contract in any year. *High Uncertainty* indicates if the country-level "Uncertainty Index" is above the sample median. We obtain the index from Ahir et al. (2018). *High Subsidy* indicates if the country-level government subsidy is above the sample median. We obtain the government subsidy data from World Bank. All indicator variables are at the previous year of corporate investment. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

The third set of cross-sections is predicated on firms' financial condition and aims to circumvent the caveat associated with our over-investment analysis, which posits that firms may curtail investment due to a dearth of funds and heightened financial constraints. We undertake a test of our baseline regression model among financially constrained firms to ascertain whether a firm's under-investment propels the reduction in corporate investment rate owing to financial constraints. Following the implementation of financial disclosure laws, firms may experience a reduction in funding and government support, which is heavily contingent on the firm's proximity to government officials. If this is the correct mechanism, we anticipate that the adverse impact of anti-corruption measures on the corporate investment rate would be more pronounced among financially constrained firms. Table 6 outlines the findings.

The variable *Financial Constrained* denotes whether a firm is financially constrained, based on the latest fiscal year-end prior to its investment decisions. We adopt different definitions of financial constraints and construct median values of financial constraint measures by country and industry.[12] In Column 1, financially constrained firms are those with cash holdings below the median. Although the estimated coefficient on the interaction term between *Financial Constrained* and *Anti Corrupt* is negative, it lacks statistical significance. In Column 2, we follow prior research (Rajan and Zingales (1998), Byoun (2008) and Bai et al. (2020), among others) and deem firms reliant on external finance if their capital expenditures exceed operating cash flows. The estimate is positive but statistically insignificant. In Columns 3 and 4, we classify non-dividend-paying and small firms (those with below-median total assets) as financially constrained, yet no statistically significant effect is observed. In Columns 5 and 6, we gauge financial constraints using the KZ index (from Kaplan and Zingales (1997)) and WW index (from Whited and Wu (2006)), respectively. *Financial Constrained* equals one if the index value surpasses the median and zero otherwise. Nevertheless, we do not find a statistically significant impact.

The aforementioned cross-sectional variation analyses provide further support for our findings in Tables 3 and 4. There are several reasons for this. First, our analysis reveals that the adverse effect of anti-corruption on corporate investment rates does not get stronger among firms that are headquartered in countries with high uncertainty indices or are financially constrained. This finding helps to dispel the possibility that a firm's underinvestment is responsible for the reduction in corporate investment

[12] We obtain similar findings when utilizing sample medians of financial constraints.

Table 6
Financially constrained firms.

	Dependent variable:					
	Inv_t					
	Cash holdings (1)	External finance (2)	Non-dividend-paying (3)	Small firms (4)	KZ index (5)	WW index (6)
Anti corrupt × Financial constrained	−0.002	0.001	−0.008	−0.002	−0.007	−0.002
	(0.004)	(0.003)	(0.006)	(0.003)	(0.005)	(0.002)
Financial constrained	−0.002**	0.015***	−0.005***	0.007***	−0.001	−0.0001
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Control Variables?	y	y	y	y	y	y
Industry × Year FE?	y	y	y	y	y	y
Firm FE?	y	y	y	y	y	y
Observations	343,204	337,038	337,038	343,204	296,802	305,907
R^2	0.376	0.385	0.380	0.377	0.403	0.392
Adjusted R^2	0.325	0.334	0.328	0.325	0.347	0.337

This table presents the effect of anti-corruption on corporate investment rate among financially constrained firms. *Financial Constrained* is a dummy variable indicating whether or not the firm is classified as financially constrained at the most recent fiscal year-end before the corporate investment decisions. The heading in each column represents the measure of financial constraints. In Column 1, financially constrained firms have below-median cash holdings. In Column 2, firms depend on external finance if their capital expenditures exceed operating cash flows. Column 3 and Column 4 classify non-dividend-paying and small firms (firms with below-median total assets) as financially constrained. Column 5 and Column 6 measure financial constraints using the KZ index and WW index, and *Financial Constrained* is equal to one if the value of the index is above the median and zero otherwise. All the above median values are constructed by country and industry. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

rates due to economic/policy uncertainty or financial constraints. Second, our results are in line with those of Zhang et al. (2019), who find that the negative impact of anti-corruption on corporate investment rates is more pronounced among firms that have government procurement contracts or are based in countries with high government subsidies. This finding serves to demonstrate that anti-corruption measures can effectively curtail excessive investment by firms that are driven by excessive government subsidies or procurement.

5. Additional evidence and robustness checks

This study is not immune to endogeneity issues or the possibility that our results may be sensitive to the sample and measures chosen. To address these concerns, we employ several robustness tests. First, we conduct propensity score matching to ensure that treatment and control firms are comparable in observable characteristics. Second, we present the timing of changes in corporate investment rates around the anti-corruption law (financial disclosure law) using the main sample. Third, we apply an alternative estimator aimed at addressing potential biases arising from staggered Difference-in-Differences (DiD) designs. Fourth, we use alternative measures of corporate investment rate and re-run the analysis. We present other forms of investment, such as R&D expenses, acquisition expenses, and Selling, General & Administrative expenses (SG&A) expenses. Finally, we employ alternative samples for analysis.

5.1. Propensity score matching

There exists a potential issue of endogeneity wherein certain omitted factors may impact both corporate investment decisions and the adoption of anti-corruption laws. For instance, a country experiencing a challenging economic climate may implement an anti-corruption policy as a means of stimulating the economy. As a result, firms within the treatment country may reduce their corporate investment. In such a scenario, we may observe a negative correlation between anti- corruption and the rate of corporate investment. However, it would be erroneous to conclude that anti-corruption policies lead to a decrease in firms' investment rates, as the treatment and control countries differ in other observable characteristics beyond the treatment. To mitigate such concerns, the propensity score matching methodology can be employed, which necessitates that treatment and control firms are similar and comparable in observables, such as similar economic environments.

In this subsection, we employ propensity score matching to compare the investment rate of treatment and control firms while controlling for observable characteristics. In order to validate the pre-parallel trend assumption and assess the persistence of any effect, we expand our test window from the conventional 3-year period to a 5-year period. We include all treatment firms within a 5-year window surrounding the adoption of the financial disclosure law. Control firms are selected based on their location (as assigned by the World Bank) and their industry classification code (2-digit SIC). Additionally, we require that both treatment and control firms have at least one year of data coverage before and after the treatment year.

In the year preceding the implementation of the law, we conduct an estimation of the propensity scores for firms to be included in the treatment group. We employ the variables outlined in Column 4 of Table 3, including firm size, tangibility, profitability, Tobins' Q, book leverage, cash holding, and the economic environment of the country (GDP level and growth). Subsequently, we

Table 7
Propensity score matching.

	Dependent variable:		
	Inv_t		
	1-1 matching (1)	2-1 matching (2)	3-1 matching (3)
Treat × Post	−0.025***	−0.024***	−0.022***
	(0.003)	(0.003)	(0.003)
Treat	0.007*	0.008***	0.007***
	(0.003)	(0.002)	(0.002)
Post	0.002*	0.002***	0.001*
	(0.001)	(0.001)	(0.001)
Control Variables?	y	y	y
Industry × Year FE?	y	y	y
Firm FE?	y	y	y
Observations	58,402	71,063	82,723
R^2	0.438	0.424	0.416
Adjusted R^2	0.361	0.358	0.357

This table presents the impact of anti-corruption on corporate investment rate using the propensity score matched samples over the window ±5 years around the law passage. The propensity scores are estimated based on the control variables used in Column 4 of Table 3, including firm size, tangibility, profitability, Tobin's Q, book leverage, cash holdings, country GDP level, and growth. We require that the treatment and control groups be in the same 2-digit SIC industry and region (assigned by World Bank). We also require that treatment and control firms have at least one year of coverage in pre- and post-treatment periods. *Treat* is a dummy variable indicates whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place, regardless of when the law was passed. *Post* is a dummy variable indicating the periods after the law passage. In Column 1, we retain one control firm with the closest propensity score for each treatment firm. We retain up to two control firms in Column 2 and three control firms in Column 3. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

match control firms with each treatment firm by selecting the closest propensity score. To ensure the robustness of our findings, we experiment with retaining up to one, two, or three control firms for each treatment firm.

The results are presented in Table 7. The variable *Treat* is a binary variable indicating whether the firm is headquartered in a country that has an anti-corruption law (financial disclosure law) in place. The variable *Post* is a binary variable indicating the periods after the law passage. As displayed in Table 7, the estimated coefficient of the interaction between *Treat* and *Post* is negative and statistically significant at the 1% level, demonstrating that treatment firms significantly reduce their corporate investment rate after the introduction of the anti-corruption law (financial disclosure law). This finding is consistent with the results presented in Table 3. We conduct various matching techniques, and our results remain robust, indicating that the decrease in corporate investment rate is not attributed to differences in observable characteristics between firms headquartered in countries that have passed the anti-corruption law and those that have not.

5.2. Dynamic timing around the law adoption

The issue of comparability in observables between treated and control firms can be resolved through propensity matching. However, to further mitigate concerns of reverse causality and validate the parallel trends assumption, we present the timing of changes in corporate investment rate relative to the timing of the passage of anti-corrupt law (financial disclosure law) using the main sample. This involves the use of dummy variables such as *Anti Corrupt (−i)* and *Anti Corrupt (≥i)*, which indicate whether the country where the firm is headquartered will pass an anti-corrupt law (financial disclosure law) in i years, and whether or not the country has passed the law for at least i years, respectively. These variables are included in other specifications that follow Column 4 of Table 3. If reverse causality is a concern in our setting, or if pre-treatment trends exist, we would observe a decline (or increase) in corporate investment rate before the law's passage.

Table 8 reveals that the coefficient lacks statistical significance prior to the enactment of the anti-corruption law, indicating that our findings are not influenced by any pre-existing trends. However, following the implementation of the law, we observe a significant reduction in the corporate investment rate. The coefficient of Anti Corrupt (0) is −0.010, which is statistically significant at the 1% level. Subsequently, in the post-period, the economic significance of the coefficient increase considerably.

To enhance the visual representation of the pattern in corporate investment rate surrounding the implementation of financial disclosure legislation, we present a graph in Fig. 1 that displays the coefficient estimates in Column 1 of Table 8. The x-axis denotes the year in relation to the enactment of the anti-corruption law, while the y-axis represents the coefficient estimates. The plot reveals a parallel trend prior to the law's implementation and a substantial decline in trend following its implementation.

The aforementioned findings suggest that firms reduce their capital expenditures subsequent to the implementation of anti-corruption legislation, but not prior to its enactment. Additionally, the results suggest that firms do not fully anticipate the implementation of anti-corruption laws in their country of origin. Moreover, we observe that firms do not experience a significant reduction in capital expenditures during the year of the law's implementation. Instead, the decline in capital expenditures becomes

Table 8
Anti-corruption and timing of corporate investment rate.

	Dependent variable:
	Inv_t
	(1)
Anti corrupt (−5)	0.002
	(0.005)
Anti corrupt (−4)	0.003
	(0.007)
Anti corrupt (−3)	−0.002
	(0.006)
Anti corrupt (−2)	−0.004
	(0.004)
Anti corrupt (0)	−0.010***
	(0.004)
Anti corrupt (+ 1)	−0.013***
	(0.003)
Anti corrupt (+ 2)	−0.017***
	(0.006)
Anti corrupt (+ 3)	−0.018**
	(0.008)
Anti corrupt (≥4)	−0.016**
	(0.007)
Control Variables?	y
Industry × Year FE?	y
Firm FE?	y
Observations	343,204
R^2	0.381
Adjusted R^2	0.329

This table presents the timing of changes in corporate investment rate around the anti-corrupt law (financial disclosure law) adoption. *Anti Corrupt (−5)* is a dummy variable indicating if the firm's headquartered country will pass an anti-corrupt law (financial disclosure law) in 5 years. Other indicator variables are constructed similarly, with numbers in parentheses indicating the difference in the number of years relative to the law passage, if there are any. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

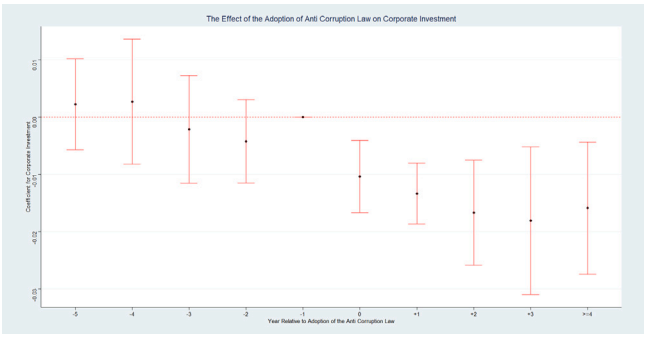

Fig. 1. The timing of corporate investment rate around the adoption of anti-corruption law.
This figure shows the effect of the adoption of anti-corruption law (financial disclosure law) on corporate investment rate. On the *y*-axis, the graph plots the coefficient estimates from regressing corporate investment rate on interaction term between treated group indicator and dummy variables indicating the year relative to the adoption of the anti-corruption law (Table 8). The *x*-axis shows the year relative to the adoption of the anti-corruption law. The red error bars correspond to the 90% confidence intervals of the coefficient estimates, which are calculated from standard errors clustered by country.

Table 9
Anti-corruption and corporate investment rate: alternative estimator.

	Dependent variable:	
	Inv_t	
	(1)	(2)
Anti corrupt	−0.0088**	−0.0055***
	(0.004)	(0.002)
Control Variables?		y
Industry × Year FE?	y	y
Firm FE?	y	y
Observations	343,204	343,204
Adjusted R^2	0.0044	0.0018

This table repeats the analyses in Table 3 by using an alternative estimator by Gardner (2022). *Anti Corrupt* is a dummy variable indicating whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year t, regardless of when the law was passed. All variables are defined in Table 2. Industry fixed effects are defined at the 2-digit SIC level. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

more pronounced in the period following the law's implementation, which is in line with the notion that firms require time to adapt their capital investments.

5.3. Alternative estimator

In this subsection, we conduct a robustness check aimed at addressing potential biases arising from staggered Difference-in-Differences (DiD) designs, particularly when the treatment is rolled out at different times across units. It is well-documented that estimates from staggered DiD regressions obtained through ordinary least squares (OLS) can be biased due to heterogeneous treatment effects and variation in treatment timing (Baker et al., 2022). Specifically, in these settings, early-treated units may serve as inappropriate controls for later-treated units, leading to an over- or underestimation of the true treatment effect.

To mitigate these issues, we apply the alternative estimator proposed by Gardner (2022), which corrects for the biases associated with staggered DiD by accounting for the dynamic nature of treatment. This method ensures that the treatment effect is estimated more accurately across cohorts that are exposed to the policy at different times.

Table 9 presents the results of these alternative estimations, where the dependent variable is the firm's investment rate (*Inv*). The key explanatory variable, *Anti Corrupt*, indicates whether a country in which the firm is headquartered has an anti-corruption law (financial disclosure law) in place in year *t*, regardless of when the law was passed. Two specifications are reported: Column 1 includes only firm and industry-by-year fixed effects, while Column 2 adds control variables to account for other potential confounders. In Column 1, the coefficient on *Anti Corrupt* is −0.0088 and is statistically significant at the 5% level. In Column 2, which includes control variables, the effect remains negative and statistically significant at the 1% level, with a slightly smaller magnitude of −0.0055.

Notably, the results from this robustness check reveal that the estimated treatment effect decreases in magnitude after applying the staggered treatment correction from Gardner (2022). Specifically, the corrected results suggest that financial disclosure laws lead to an approximate 10% reduction in investment relative to its sample mean, as opposed to the 26% reduction reported in Table 3 using the conventional staggered DiD approach. This reduction in magnitude is expected, as the staggered treatment correction accounts for potential biases introduced by differential treatment timing and heterogeneous treatment effects. Without this correction, traditional two-way fixed effects estimators may conflate the effects of earlier-treated units with those of later-treated units, potentially overstating the treatment effect. By explicitly addressing these issues, the Gardner correction provides a more conservative but arguably more accurate estimate of the treatment effect.

Although the corrected magnitude is smaller, it remains both statistically and economically significant. A 10% reduction in investment is substantial, especially given the scale and scope of anti-corruption reforms. These findings highlight the importance of using robust methodologies, such as the staggered treatment correction, to ensure the credibility of empirical results. The fact that the treatment effect decreases after applying this correction underscores the reliability of the identification strategy and reinforces the conclusion that anti-corruption reforms may discourage corporate investment.

5.4. Controlling for region-level corporate investment

Given the importance of neighboring countries' economic development on a focal country's economic development (e.g., Moreno and Trehan (1997) and Rey and Janikas (2005)), it is crucial to control for region-level corporate investment to account for potential regional shocks. Such shocks, including liberalizing political movements, EU expansion, or the conclusion of regional conflicts, may simultaneously influence both government reforms and corporate investment rates, confounding the relationship between anti-corruption laws and firm-level investment. By including average corporate investment rates in neighboring or nearby countries as a control variable, we can better isolate the direct impact of anti-corruption laws from broader regional dynamics.

Table 10
Other types of investment.

Panel A: Baseline

	Dependent variable:				
	RnD/at_t	Acq/at_t	SGA/at_t	Inv/at_t	$Inv2/at_t$
	(1)	(2)	(3)	(4)	(5)
Anti corrupt	−0.001	0.002**	−0.022	−0.012**	−0.037**
	(0.001)	(0.001)	(0.013)	(0.006)	(0.015)
$Size_{t-1}$	−0.0004***	−0.001***	−0.029***	−0.011***	−0.043***
	(0.0001)	(0.0002)	(0.006)	(0.002)	(0.008)
$Tangibility_{t-1}$	0.001	−0.001	−0.018	0.016**	−0.007
	(0.001)	(0.001)	(0.013)	(0.007)	(0.019)
$Profitability_{t-1}$	−0.003	0.003*	−0.061***	0.046***	−0.016
	(0.002)	(0.002)	(0.018)	(0.014)	(0.034)
Tobin's Q_{t-1}	0.0004***	0.001**	0.008***	0.004***	0.013***
	(0.0001)	(0.0002)	(0.002)	(0.001)	(0.003)
Book $leverage_{t-1}$	−0.003***	−0.004***	−0.015*	−0.042***	−0.064***
	(0.001)	(0.001)	(0.008)	(0.004)	(0.009)
Cash $holding_{t-1}$	−0.001*	0.011***	−0.019	0.053***	0.043
	(0.001)	(0.002)	(0.019)	(0.010)	(0.030)
$Log(GDP)_{t-1}$	−0.005**	0.001	−0.079**	−0.044***	−0.126***
	(0.002)	(0.001)	(0.035)	(0.010)	(0.029)
GDP $Growth_{t-1}$	−0.00004	0.0001**	0.001*	0.002***	0.003***
	(0.0001)	(0.0001)	(0.001)	(0.0004)	(0.001)
Industry × Year FE?	y	y	y	y	y
Firm FE?	y	y	y	y	y
Observations	343,204	343,204	335,483	343,204	335,483
R^2	0.755	0.221	0.722	0.385	0.609
Adjusted R^2	0.735	0.156	0.698	0.334	0.576

This panel presents the effect of anti-corruption on other investment types. In Column 1, the outcome variable is R&D expenses scaled by 1-year lagged total assets. When R&D expenses are missing, we treat them as 0. Column 2's outcome variable is acquisition expenses scaled by 1-year lagged total assets. When acquisition expenses are missing, they are treated as 0. In Column 3, the outcome variable is Selling, General & Administrative (SG&A) expenses scaled by 1-year lagged total assets. In Column 4, we aggregate the firm's capital expenditures, R&D expenses, and acquisition expenses and scale them by 1-year lagged total assets as the outcome variable. In Column 5, we aggregate the firm's capital expenditures, R&D expenses, acquisition expenses, and SG&A expenses and scale them by 1-year lagged total assets as the outcome variable. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

Panel B: Bidder announcement return

	Dependent variable:			
	CAR_t			
	(1)	(2)	(3)	(4)
Anti corrupt	0.007**	0.006**	0.006**	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)
$Size_{t-1}$		−0.002	−0.002	−0.002
		(0.001)	(0.001)	(0.001)
$Tangibility_{t-1}$		−0.004	−0.004	−0.004
		(0.009)	(0.010)	(0.010)
$Profitability_{t-1}$		−0.016	−0.018	−0.018
		(0.016)	(0.016)	(0.016)
Tobin's Q_{t-1}		−0.002*	−0.002**	−0.002**
		(0.001)	(0.001)	(0.001)
Book $leverage_{t-1}$			−0.006	−0.006
			(0.005)	(0.005)
Cash $holding_{t-1}$			−0.002	−0.002
			(0.006)	(0.006)
$Log(GDP)_{t-1}$				0.012
				(0.008)
GDP $Growth_{t-1}$				−0.0001
				(0.001)
Industry*Year FE?	Yes	Yes	Yes	Yes
Firm FE?	Yes	Yes	Yes	Yes
Observations	29,365	29,365	29,365	29,365
R^2	0.461	0.462	0.462	0.462
Adjusted R^2	0.121	0.122	0.122	0.122

This panel presents the effect of anti-corruption on 7-day bidder announcement return (*CAR*). Other specifications follow Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

Table B.3 presents the results of this robustness check, where we control for the average corporate investment rate in the same region as the firm's headquarter country (*Inv (Region)*). The inclusion of this control variable leads to a smaller reduction in the economic magnitude of the *Anti Corrupt* coefficient compared to our baseline analysis in Table 3. Specifically, the coefficient remains negative and statistically significant, indicating that the adoption of anti-corruption laws continues to have a meaningful impact on firm-level investment. The smaller reduction in magnitude suggests that while regional-level factors may play a role, they do not fully account for the observed relationship between anti-corruption reforms and corporate investment behavior.

These findings confirm that the results are robust to controlling for region-level corporate investment. This additional control helps to address potential concerns about omitted variable bias arising from regional shocks, further strengthening the validity of our conclusions. By demonstrating that the observed effects persist after accounting for broader regional dynamics, we provide greater confidence in the interpretation that anti-corruption reforms are associated with changes in corporate investment behavior.

5.5. Alternative measures and other types of corporate investment

In order to enhance the reliability of our findings, we incorporate various alternative measures of corporate investment rate to supplement our investigation. Initially, we normalize capital expenditures by the firm's net Property, Plant, and Equipment at the start of the year (Capx_ppent). Furthermore, we normalize capital expenditures by the firm's sales (Capx_sale). Additionally, we apply the natural logarithm to capital expenditures (Log_capx) and employ it as the dependent variable in our analysis.

The findings are presented in Table B.4. Notably, the coefficient of the variable *Anti Corrupt* exhibits a negative and statistically significant association at the 5% level across all columns. These results indicate that the observed decline in corporate investment rate subsequent to the implementation of anti-corruption legislation is consistent and resilient to variations in the measurement of corporate investment rate.

This subsection also delves into other forms of investment for several reasons. First, prior research has shown that anti-corruption measures can stimulate corporate innovation, while corruption can impede it (for example, Xu and Yano (2017), Gan and Xu (2019) and Ellis et al. (2020)). We investigate whether this phenomenon can be observed on a global scale by examining the alteration in corporate R&D expenditures following the implementation of anti-corruption laws. Second, we explore whether firms compensate for reduced capital expenditures by increasing other forms of investment. Specifically, we analyze changes in M&A expenses and Selling, General, and Administrative (SG&A) expenses.

Panel A of Table 10 presents the findings on other forms of investment. In Column 1, we normalize the firm's R&D expenses by 1-year lagged total assets (RnD_at). The coefficient of *Anti Corrupt* is statistically insignificant and negative.[13] In Column 2, we use acquisition expenses normalized by 1-year lagged total assets (Acq_at) as the outcome variable. The coefficient is statistically significant at 5%, indicating that firms tend to increase their M&A expenses after the implementation of anti-corruption. The magnitude of this effect is noteworthy, with a 0.2% increase in M&A expenses amounting to 5.43 million US dollars. In Column 3, we use Selling, General and Administrative (SG&A) expenses normalized by 1-year lagged total assets as the outcome variable. Similar to R&D expenses, the coefficient of *Anti Corrupt* is negative, but the magnitude is much larger. In Column 4, we aggregate the firm's capital expenditures, R&D expenses, and acquisition expenses and normalize them by 1-year lagged total assets. The statistical and economic significance of the coefficient of *Anti Corrupt* are comparable to Column 4 of Table 3. When we further include SG&A expenses in Column 5, the coefficient of *Anti Corrupt* is negative and statistically significant at 1%, and the magnitude is larger than that of Column 4.

In Panel B, we further investigate whether firms conduct more value-enhancing merger and acquisitions. To that end, we obtain global M&A data from SDC Database and stock return data from CRSP and Compustat Databases. The outcome variable *CAR* is the 7-day bidder announcement returns, averaged at each country-year level. Specifically, the estimation period is from day t-230 to day t-11, where t is the M&A announcement date. Across all columns, we document positive and statistically significant coefficients, indicating that firms conduct more value-enhancing M&A after adoption of financial disclosure laws. This result is consistent with the argument that anti-corruption enhances corporate investment efficiency.

In summary, our findings demonstrate the resilience of the corporate investment rate reduction across various measures, and suggest a tendency for firms to engage in increased and value-enhancing M&A endeavors subsequent to the implementation of financial disclosure regulations. Furthermore, our analysis does not reveal a definitive impact of financial disclosure laws on corporate innovation or firm SG&A expenditures.

5.6. Alternative sample for analysis

In this subsection, we undertake an evaluation of an alternative sample that differs from our primary sample, as presented in Table 3. First, we include countries that have already passed financial disclosure laws before the sample period (1987). Second, we adopt an alternative approach to the adoption of laws by excluding financial disclosure laws that are solely applicable to members of parliament. Third, we incorporate firms that are based in Mainland China into our analysis.

Our analysis is presented in Table B.5. In Column 1, we include countries that have already passed financial disclosure laws before the sample period (1987). Both the statistical and economic significance of *Anti Corrupt* are comparable to Column 4 of Table 3 (−0.015). In Column 2, for the sample using alternative law scheming, the coefficient of *Anti Corrupt* remains negative

[13] The results remain unchanged when we normalize R&D expenses by firm sales.

and statistically significant at the 5% level. However, the economic magnitude is slightly lower relative to Column 4 of Table 3 (−0.015). In Column 3, when we include firms headquartered in Mainland China in the analysis, the coefficient of *Anti Corrupt* remains negative and statistically significant at the 1% level. The economic magnitude remains comparable to Column 4 of Table 3 (−0.014). Additionally, in untabulated analysis, we exclude one country at a time and re-run the regression analysis. Our results do not change qualitatively, suggesting that they are not driven by one particular country.

Table B.5 presents a direct examination of the anti-corruption campaign in Mainland China, which was launched in November 2012. We designate the year 2013 as the treatment year and consider the campaign as plausibly exogenous and influential on both firm performance and corporate investment decisions. Our results in Columns 4 and 5 indicate that firms headquartered in mainland China exhibit reduced corporate investment but higher investment efficiency following the anti-corruption campaign. This finding aligns with our main results as well as with the findings of Zhang et al. (2019) and Pan and Tian (2020).

6. Conclusion

This study investigates the impact of anti-corruption policies on corporate investment in a global context. In order to establish a causal relationship, we leverage the implementation of financial disclosure regulations at the country or regional level. Employing a Difference-in-Differences analytical framework, we contrast alterations in the investment rate and efficiency of firms based in jurisdictions that have adopted such laws versus those that have not.

Our findings reveal that the implementation of financial disclosure laws results in a significant decrease in the corporate investment rate, amounting to 1.3%, which represents 26% of the sample mean.[14] Simultaneously, corporate investment efficiency increases, and the tendency for over-investment decreases. We also find that the negative relationship between the passage of the law and firms' investment rate is more pronounced for firms that secure government contracts or operate in countries with higher government subsidies. Our findings are consistent with theories that suggest that corruption, as a financial impediment, leads to excessive inefficiency in capital allocation, which manifests itself as over-investment in highly subsidized firms. We reject the alternative hypothesis that the reduction in corporate investment rate is due to under-investment, as we show that this reduction does not differ among financially constrained firms or countries with high political or economic uncertainty. Our results suggest that the implementation of financial disclosure laws improves the business environment, reduces corrupt practices in highly subsidized firms, mitigates the firm's tendency to over-invest, and enhances corporate investment efficiency.

Our paper makes two significant contributions. First, it is the first study, to the best of our knowledge, that examines the impact of anti-corruption policies on firm-level outcomes in an international context. Our findings provide compelling global empirical evidence that anti-corruption policies have a positive effect on firm behavior. Second, we contribute to the existing corporate investment literature by demonstrating that anti-corruption policies can alleviate financial frictions resulting from corruption, ultimately resulting in enhanced investment efficiency.

CRediT authorship contribution statement

Wendi Huang: Writing – review & editing, Writing – original draft, Visualization, Validation, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Ye Peng:** Writing – original draft, Resources, Methodology, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Types of financial disclosure laws

For group (1), typical documents are: "anti-corruption law", "anti-corruption act", "prevention of corruption act", "decree (on law or corruption)", and "corruption eradication law". These laws mandate that public officials combat corruption, report their income, and are enforced at the national level.

For group (2), typical documents are: "rules on declaration of assets and liabilities", "regulation on asset disclosure", "decree (on disclosure)", and "declaration of assets act". The enactment of this group of laws usually follows the enforcement of group (1). They specifically require related parties to report their income and business-related interests.

For group (3), typical documents are: "conflict of interest laws", "resolution of legislative council on declaration of interests by officials" and "conflict of interests law election commission rules". This group of laws typically mandates that public officials report conflicts of interest in business-related transactions.

For group (4), typical documents are: "resolution (internal regulation of house of representatives)", "law on parliamentarians", "conflict of interest code house of commons", and "standing order of parliament". This group of laws is not intended to combat national corruption but rather to standardize the ethical code of parliament members internally.

[14] This magnitude reduces to 10% after conducting the staggered treatment correction from Gardner (2022).

Appendix B. Alternative specifications

See Tables B.1–B.5.

Table B.1
Summary statistics by country or region - "Others".

Country or region	# Observations	# Firms	Treated	Average corporate investment rate
Netherlands	3190	271	1	0.053
Denmark	3011	218	1	0.052
Philippines	3010	193	1	0.055
Finland	2856	204	0	0.055
Spain	2847	220	0	0.040
Russia	2546	215	0	0.087
Belgium	2383	169	0	0.044
Mexico	2355	151	0	0.059
New Zealand	2340	186	1	0.064
Chile	2219	153	1	0.056
Jordan	1806	124	0	0.022
Ireland	1773	117	1	0.051
Egypt	1763	155	0	0.048
Bangladesh	1747	202	0	0.071
Saudi Arabia	1727	132	1	0.075
Romania	1722	134	1	0.030
Peru	1621	92	1	0.059
Nigeria	1391	113	1	0.086
Kuwait	1298	99	0	0.043
Croatia	1246	93	0	0.058
Oman	1131	67	0	0.064
Portugal	1120	82	1	0.039
Cyprus	986	80	0	0.051
Morocco	955	60	1	0.048
Bulgaria	662	70	1	0.048
Tunisia	639	53	0	0.068
United Arab Emirates	627	59	0	0.063
Luxembourg	618	51	0	0.072
Colombia	595	40	0	0.048
Mauritius	510	45	1	0.028
Kenya	494	37	1	0.066
Slovenia	489	33	1	0.058
Latvia	459	33	1	0.069
Lithuania	443	36	1	0.071
Zimbabwe	386	44	1	0.070
Hungary	383	38	1	0.081
Estonia	329	21	1	0.082
Cayman Islands	316	61	0	0.082
Kazakhstan	286	27	1	0.103
Qatar	280	21	0	0.070
Bahrain	273	18	0	0.046
Serbia	244	41	1	0.032
Côte d'Ivoire	243	22	0	0.030
Ukraine	241	25	0	0.053
Czechia	235	28	1	0.057
Malta	223	20	0	0.052
Botswana	191	15	0	0.080
Slovakia	176	14	1	0.033
Ghana	162	15	1	0.113
Zambia	148	13	1	0.092
Palestinian Territories	145	17	0	0.041
Tanzania	135	10	1	0.124
Macao SAR China	102	14	0	0.065
Iceland	88	17	0	0.054
Namibia	45	5	1	0.057
Canada	38	3	1	0.072
Mongolia	38	3	1	0.143
Malawi	34	5	0	0.108
Lebanon	33	3	0	0.025
Ecuador	32	3	0	0.059

(*continued on next page*)

Table B.1 (*continued*).

Gabon	25	1	0	0.092
Uganda	25	4	1	0.040
Senegal	23	2	0	0.023
Azerbaijan	14	1	1	0.136
Panama	13	2	0	0.057
Kyrgyzstan	12	1	0	0.174
North Macedonia	12	1	0	0.058
Mozambique	11	1	1	0.126
Sudan	11	1	0	0.073
Burkina Faso	7	1	1	0.037
Samoa	3	1	0	0.066

This panel presents the summary statistics of the countries or regions in the category "Others" in Panel B of Table 2. Column 1 presents the name of the country or region, and Columns 2 and 3 present the number of observations and firms in the panel separately. Column 4 indicates whether the country passed financial disclosure law during the sample period, and Column 5 shows the average corporate investment rate.

Table B.2
Anti-corruption and investment efficiency (Alternative).

	Dependent variable:			
	Inv_t			
	(1)	(2)	(3)	(4)
Anti corrupt	−0.018***		−0.012***	
	(0.005)		(0.004)	
Anti corrupt × Tobin's Q_{t-1}	0.003**	0.003***		
	(0.001)	(0.001)		
Anti corrupt × Sales $Growth_{t-1}$			0.003**	0.002***
			(0.001)	(0.001)
$Size_{t-1}$	−0.008***	−0.012***	−0.008***	−0.011***
	(0.002)	(0.002)	(0.002)	(0.002)
Sales $Growth_{t-1}$			0.003***	0.003***
			(0.001)	(0.001)
$Tangibility_{t-1}$	0.017***	0.017***	0.015***	0.015***
	(0.006)	(0.006)	(0.005)	(0.005)
$Profitability_{t-1}$	0.055***	0.053***	0.057***	0.054***
	(0.009)	(0.009)	(0.011)	(0.010)
Tobin's Q_{t-1}	0.001	0.001*	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.0003)
Book $leverage_{t-1}$	−0.030***	−0.026***	−0.031***	−0.027***
	(0.004)	(0.005)	(0.004)	(0.004)
Cash $holding_{t-1}$	0.032***	0.028***	0.030***	0.026***
	(0.008)	(0.007)	(0.006)	(0.006)
$Log(GDP)_{t-1}$	−0.038***		−0.036***	
	(0.010)		(0.008)	
GDP $Growth_{t-1}$	0.001***		0.001***	
	(0.0003)		(0.0003)	
Industry × Year FE?	y	y	y	y
Firm FE?	y	y	y	y
Country × Year FE?		y		y
Observations	343,204	343,204	312,899	312,899
R^2	0.376	0.403	0.390	0.415
Adjusted R^2	0.325	0.349	0.336	0.359

This table presents the effect of anti-corruption on corporate investment rate which is defined in 3 alternative ways. Column 1 defines corporate investment rate as capital expenditures scaled by last year's net property, plant, and equipment (ppent). In Column 2, we scale capital expenditures by last year's total revenue instead. In Column 3, we take the logarithm of capital expenditures as the measure of corporate investment rate. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

Data availability

The authors do not have permission to share data.

Table B.3
Controlling for Region-level corporate investment.

	Dependent variable:			
	Inv_t			
	(1)	(2)	(3)	(4)
Anti corrupt	−0.011**	−0.013***	−0.013***	−0.013***
	(0.005)	(0.004)	(0.004)	(0.004)
Inv (Region)$_{t-1}$	0.723***	0.808***	0.772***	0.728***
	(0.127)	(0.105)	(0.104)	(0.117)
Size$_{t-1}$		−0.011***	−0.011***	−0.011***
		(0.002)	(0.002)	(0.002)
Tangibility$_{t-1}$		0.006	0.019***	0.019***
		(0.004)	(0.005)	(0.005)
Profitability$_{t-1}$		0.073***	0.060***	0.060***
		(0.012)	(0.009)	(0.009)
Tobin's Q$_{t-1}$		0.002***	0.003***	0.003***
		(0.001)	(0.001)	(0.001)
Book leverage$_{t-1}$			−0.029***	−0.028***
			(0.004)	(0.004)
Cash holding$_{t-1}$			0.029***	0.029***
			(0.008)	(0.008)
Log(GDP)$_{t-1}$				0.011
				(0.008)
GDP Growth$_{t-1}$				0.0004
				(0.0004)
Industry × Year FE?	y	y	y	y
Firm FE?	y	y	y	y
Observations	341,110	341,110	341,110	341,110
R^2	0.364	0.382	0.385	0.386
Adjusted R^2	0.310	0.329	0.333	0.333

This table repeats the analyses in Table 3 by controlling for the average corporate investment rate in the same region of the firm's headquarter country (*Inv (Region)*). Other specifications follow Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

Table B.4
Alternative measures of corporate investment rate.

	Dependent variable:		
	Capx/ppent$_t$	Capx/sale$_t$	log(1 + capx)$_t$
	(1)	(2)	(3)
Anti corrupt	−0.036**	−0.007**	−0.678**
	(0.017)	(0.003)	(0.275)
Size$_{t-1}$	−0.034***	−0.001	0.540***
	(0.007)	(0.001)	(0.072)
Tangibility$_{t-1}$	−0.621***	0.035***	1.184***
	(0.047)	(0.004)	(0.177)
Profitability$_{t-1}$	0.296***	0.029***	1.440***
	(0.031)	(0.005)	(0.220)
Tobin's Q$_{t-1}$	0.012***	0.001***	0.063***
	(0.004)	(0.0003)	(0.017)
Book leverage$_{t-1}$	−0.096***	−0.018***	−0.598***
	(0.011)	(0.003)	(0.177)
Cash holding$_{t-1}$	0.253***	0.035***	0.318
	(0.030)	(0.004)	(0.258)
Log(GDP)$_{t-1}$	−0.130***	−0.027***	−1.800*
	(0.037)	(0.008)	(0.961)
GDP Growth$_{t-1}$	0.004***	0.001***	0.022**
	(0.001)	(0.0002)	(0.009)
Industry×Year FE?	y	y	y
Firm FE?	y	y	y

(*continued on next page*)

Table B.4 (*continued*).

	Dependent variable:		
	Capx/ppent$_t$	Capx/sale$_t$	log(1 + capx)$_t$
	(1)	(2)	(3)
Observations	339,053	336,528	343,204
R^2	0.401	0.498	0.813
Adjusted R^2	0.351	0.455	0.798

This table presents the effect of anti-corruption on corporate investment rate which is defined in 3 alternative ways. In Column 1, corporate investment rate is defined as capital expenditures scaled by last year's net property, plant and equipment (ppent). In Column 2, we scale capital expenditures by last year's total revenue instead. In Column 3, we take the logarithm of capital expenditures as the measure of corporate investment rate. Other specifications follow Column 4 of Table 3. Standard errors are clustered on country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at 1% level.

Table B.5
Alternative sample for analysis.

	Dependent variable:				
	Inv$_t$				
	Alter treated	Alter law	Including China	China only	
	(1)	(2)	(3)	(4)	(5)
Anti corrupt	−0.015***	−0.012**	−0.014***		
	(0.005)	(0.005)	(0.004)		
Post 2012				−0.012***	−0.015***
				(0.002)	(0.002)
Post 2012 × Tobin's Q_{t-1}					0.001**
					(0.001)
Control Variables?	y	y	y	y	y
Industry × Year FE?	y	y	y		
Firm FE?	y	y	y	y	y
Observations	434,634	421,741	380,357	37,153	37,153
R^2	0.376	0.390	0.378	0.392	0.393
Adjusted R^2	0.322	0.338	0.325	0.321	0.321

This table presents the anti-corruption effect on corporate investment using alternative samples. In Column 1, the difference from the main panel analyzed in Table 3 is that the anti-corrupt laws (financial disclosure laws), which only apply to parliament members, are not included in the analysis. In Column 2, the difference from the main panel analyzed in Table 3 is that firms headquartered in Mainland China are also included in the analysis. In Column 3 and Column 4, the sample is limited to firms headquartered in Mainland China. *Post 2012* indicates whether or not the year is after 2012, in which the anti-corruption policy was officially launched in Mainland China. Other specifications follow Column 4 of Table 3. Standard errors are clustered on the country level. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. All continuous variables are winsorized at the 1% level.

References

Acemoglu, Daron, Verdier, Thierry, 1998. Property rights, corruption and the allocation of talent: a general equilibrium approach. Econ. J. 108 (450), 1381–1403.
Ahir, Hites, Bloom, Nicholas, Furceri, Davide, 2018. The world uncertainty index. Available At SSRN 3275033.
Al-Sadig, Ali, 2009. The effects of corruption on FDI inflows. Cato J. 29, 267.
Almeida, Heitor, Campello, Murillo, 2007. Financial constraints, asset tangibility, and corporate investment. Rev. Financ. Stud. 20 (5), 1429–1460.
Athanasouli, Daphne, Goujard, Antoine, Sklias, Pantelis, 2012. Corruption and firm performance: Evidence from Greek firms. Int. J. Econ. Sci. Appl. Res. 5 (2), 43–67.
Bai, John, Fairhurst, Douglas, Serfling, Matthew, 2020. Employment protection, investment, and firm growth. Rev. Financ. Stud. 33 (2), 644–688.
Baker, Andrew C., Larcker, David F., Wang, Charles C.Y., 2022. How much should we trust staggered difference-in-differences estimates? J. Financ. Econ. 144 (2), 370–395.
Bloom, Nick, Bond, Stephen, Van Reenen, John, 2007. Uncertainty and investment dynamics. Rev. Econ. Stud. 74 (2), 391–415.
Brada, Josef C, Drabek, Zdenek, Mendez, Jose A, Perez, M Fabricio, 2019. National levels of corruption and foreign direct investment. J. Comp. Econ. 47 (1), 31–49.
Brown, Nerissa C, Smith, Jared D, White, Roger M, Zutter, Chad J, 2021. Political corruption and firm value in the US: Do rents and monitoring matter? J. Bus. Ethics 168 (2), 335–351.
Byoun, Soku, 2008. How and when do firms adjust their capital structures toward targets? J. Financ. 63 (6), 3069–3096.
Chen, Shimin, Sun, Zheng, Tang, Song, Wu, Donghui, 2011. Government intervention and investment efficiency: Evidence from China. J. Corp. Financ. 17 (2), 259–271.
Collins, Jamie D., Uhlenbruck, Klaus, Rodriguez, Peter, 2009. Why firms engage in corruption: A top management perspective. J. Bus. Ethics 87 (1), 89–108.
Colonnelli, Emanuele, Prem, Mounu, 2017. Corruption and firms: evidence from randomized audits in Brazil. Available At SSRN 2931602.
Colonnelli, Emanuele, Prem, Mounu, 2020. Corruption and firms. Available At SSRN 2931602.
Drabek, Zdenek, Payne, Warren, 2002. The impact of transparency on foreign direct investment. J. Econ. Integr. 777–810.
Ellis, Jesse, Smith, Jared, White, Roger, 2020. Corruption and corporate innovation. J. Financ. Quant. Anal. 55 (7), 2124–2149.
Fisman, Raymond, Svensson, Jakob, 2007. Are corruption and taxation really harmful to growth? Firm level evidence. J. Dev. Econ. 83 (1), 63–75.
Gan, Weiyu, Xu, Xixiong, 2019. Does anti-corruption campaign promote corporate R&D investment? evidence from China. Financ. Res. Lett. 30, 292–296.
Gardner, John, 2022. Two-stage differences in differences. arXiv preprint arXiv:2207.05943.

Giannetti, Mariassunta, Liao, Guanmin, You, Jiaxing, Yu, Xiaoyun, 2021. The externalities of corruption: Evidence from entrepreneurial firms in China. Rev. Financ. 25 (3), 629–667.
Gulen, Huseyin, Ion, Mihai, 2016. Policy uncertainty and corporate investment. Rev. Financ. Stud. 29 (3), 523–564.
Harford, Jarrad, Wang, Cong, Zhang, Kuo, 2017. Foreign cash: Taxes, internal capital markets, and agency problems. Rev. Financ. Stud. 30 (5), 1490–1538.
Huang, Chenghao, Jin, Zhi, Tian, Siyang, Wu, Eliza, 2023. The real effects of corruption on M&A flows: Evidence from China's anti-corruption campaign. J. Bank. Financ. 150, 106815.
Jain, Arvind K., 2001. Corruption: A review. J. Econ. Surv. 15 (1), 71–121.
Javorcik, Beata Smarzynska, Wei, Shang-Jin, 2002. Corruption and cross-border investment: firm level evidence.
Kaplan, Steven N., Zingales, Luigi, 1997. Do investment-cash flow sensitivities provide useful measures of financing constraints? Q. J. Econ. 112 (1), 169–215.
Kim, Hyunseob, Kung, Howard, 2017. The asset redeployability channel: How uncertainty affects corporate investment. Rev. Financ. Stud. 30 (1), 245–280.
Kong, Dongmin, Tao, Yunqing, Wang, Yanan, 2020. China's anti-corruption campaign and firm productivity: Evidence from a quasi-natural experiment. China Econ. Rev. 63, 101535.
La Porta, Rafael, Lopez-de Silanes, Florencio, Shleifer, Andrei, 1999. Corporate ownership around the world. J. Financ. 54 (2), 471–517.
Lee, Chien-Chiang, Wang, Chih-Wei, Ho, Shan-Ju, 2020. Country governance, corruption, and the likelihood of firms' innovation. Econ. Model. 92, 326–338.
Malmendier, Ulrike, Tate, Geoffrey, 2005. CEO overconfidence and corporate investment. J. Financ. 60 (6), 2661–2700.
Mauro, Paolo, 1995. Corruption and growth. Q. J. Econ. 110 (3), 681–712.
Mauro, Paolo, 1998. Corruption and the composition of government expenditure. J. Public Econ. 69 (2), 263–279.
Moreno, Ramon, Trehan, Bharat, 1997. Location and the growth of nations. J. Econ. Growth 2 (4), 399–418.
Murphy, Kevin M., Shleifer, Andrei, Vishny, Robert W., 1991. The allocation of talent: Implications for growth. Q. J. Econ. 106 (2), 503–530.
Nguyen, Thuy Thu, Van Dijk, Mathijs A., 2012. Corruption, growth, and governance: Private vs. state-owned firms in Vietnam. J. Bank. Financ. 36 (11), 2935–2948.
Pan, Xiaofei, Tian, Gary Gang, 2020. Political connections and corporate investments: Evidence from the recent anti-corruption campaign in China. J. Bank. Financ. 119, 105108.
Paravisini, Daniel, 2008. Local bank financial constraints and firm access to external finance. J. Financ. 63 (5), 2161–2193.
Rajan, Raghuram G., Zingales, Luigi, 1998. Power in a theory of the firm. Q. J. Econ. 113 (2), 387–432.
Rey, Sergio J., Janikas, Mark V., 2005. Regional convergence, inequality, and space. J. Econ. Geogr. 5 (2), 155–176.
Richardson, Scott, 2006. Over-investment of free cash flow. Rev. Account. Stud. 11 (2–3), 159–189.
Shleifer, Andrei, Vishny, Robert W., 1993. Corruption. Q. J. Econ. 108 (3), 599–617.
Shleifer, Andrei, Vishny, Robert W., 1994. Politicians and firms. Q. J. Econ. 109 (4), 995–1025.
Smith, Jared D., 2016. US political corruption and firm financial policies. J. Financ. Econ. 121 (2), 350–367.
Stein, Jeremy C., 2003. Agency, information and corporate investment. Handb. Econ. Financ. 1, 111–165.
Wei, Shang-Jin, 2000. How taxing is corruption on international investors? Rev. Econ. Stat. 82 (1), 1–11.
Whited, Toni M., Wu, Guojun, 2006. Financial constraints risk. Rev. Financ. Stud. 19 (2), 531–559.
Xu, Gang, Yano, Go, 2017. How does anti-corruption affect corporate innovation? Evidence from recent anti-corruption efforts in China. J. Comp. Econ. 45 (3), 498–519.
Zeume, Stefan, 2017. Bribes and firm value. Rev. Financ. Stud. 30 (5), 1457–1489.
Zhang, Huili, An, Ran, Zhong, Qinlin, 2019. Anti-corruption, government subsidies, and investment efficiency. China J. Account. Res. 12 (1), 113–133.
Zhao, Xiaoqin, Wan, Difang, Xu, Hao, 2013. Political connections and the efficiency of capital allocation through bond financing in Chinese listed companies. Emerg. Mark. Financ. Trade 49 (sup2), 158–170.