# Does State Surveillance Benefit a Firm's Internal Control?

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**Abstract**: This study examines the impact of state surveillance on a firm's internal control. Based on the staggered security camera installations in China, our difference-in-differences regression results suggest an improvement in internal control among firms located in cities under state surveillance. This effect was more pronounced in cities with lower internet penetration, higher institutional trust, or stronger communist legacies. Additionally, reporting quality improves following the implementation of state surveillance measures. Finally, we find that state surveillance contributes to internal control by driving labor migration, which, in turn, enhances employee productivity and the availability of qualified staff.

**Keywords:** Internal Control; State Surveillance; Labor Migration

**JEL Classification:** G30; G34; P34

"*According to a report from IHS Markit Technology, now a part of Informa Tech, China had 349 million surveillance cameras installed as of 2018, nearly five times the number of cameras in the United States. China also has eight of the world's 10 most surveilled cities based on the number of cameras per 1,000 people, according to UK-based technology research firm Comparitech*" CNN.com, April 28, 2020.

## 1. Introduction

Information technologies have brought great convenience to people's lives. However, in this age of digitalization, they also create opportunities for governments to monitor their citizens and intervene in society. Over the past decade, state surveillance has steadily increased worldwide, as demonstrated by the widespread deployment of powerful surveillance tools by more than 30 nations until 2018 (Xu et al., 2022). For instance, Edward Snowden exposes global surveillance operations conducted by the U.S. administration, while Chinese citizens were required to install the "health code" app during the Covid-19 outbreak. Despite the intense debate sparked by state surveillance regarding liberty and security, its impact on the real economy remains underexplored. This study aims to fill this crucial gap by investigating the influence of state surveillance on corporate behavior, specifically examining its impact on a firm's internal control.

We investigate this relationship by capitalizing on a unique institutional setting in China, where the central government has implemented a phased installation of street cameras across various cities. This setting is exceptionally advantageous for empirical design for three main reasons. First, in western democracies, state surveillance primarily targets international communications, whereas in China, surveillance predominantly focuses on the domestic sphere (Xu, 2021). This emphasis on domestic monitoring

sharpens our identification strategy, allowing us to better capture the true impact of state surveillance. Second, the installation of surveillance cameras at the city level is motivated by safety and security concerns, as well as potential political motivations for suppression (Su et al., 2022). As these cameras are not initially installed with the intention of influencing corporate behavior, any observed effects on internal control may be unintended consequences. Third, the staggered rollout of citywide camera installations provides an ideal backdrop for us to employ the difference-in-differences (DiD) framework. The presence of multiple exogenous shocks affecting different corporations at different time points helps us mitigate potential noise and biases that can arise in single-shock studies (Robert and Whited, 2013).

We hypothesize that state surveillance positively impacts internal control, a notion supported by previous research. According to Kao and Sapp (2022), state surveillance enhances public security and preserves social stability. Domestic migrants seeking a secure living environment are more likely to settle in cities with state surveillance. As Peri (2016) notes, labor migration generates two positive externalities. First, the convergence of skilled migrants can stimulate knowledge acquisition and experience sharing through social interactions, ultimately increasing the productivity of internal control employees (Hunt and Gauthier-Loiselle, 2010). Additionally, migrants from diverse backgrounds may introduce the benefits of cultural diversity (Ottaviano and Peri, 2006). This economic value can be observed within an internal control team, where culturally diverse members perform their duties more efficiently and effectively due to complementary skills (Trax et al., 2015). Overall, knowledge spillovers and complementary skills enhance the productivity of accounting staff in implementing internal control policies. Second, an influx of migrant

workers can expand the pool of talent, thereby creating a more robust local labor market (Chassamboulli and Palivos, 2014). Consequently, firms find it easier to recruit a sufficient number of qualified personnel, which enables them to address internal control weaknesses promptly and effectively (Ge and McVay, 2005). In other words, qualified staff resulting from labor migration contribute to the improvement of internal control quality.

Conversely, we anticipate that state surveillance may negatively impact internal control because of the potential negative externalities associated with immigration. Peri (2016) argues that domestic migration may lead to negative externalities, such as higher land prices. Saiz (2007) reinforces this notion by detecting the positive correlation between immigration and housing prices. The significant rise in the cost of living could discourage immigration and even incentivize emigration of local talent. Therefore, the firm encounters increased challenges in hiring and retaining skilled accounting employees, which inevitably undermines the internal control system.

Nevertheless, it is possible that state surveillance has no significant impact on internal control. This could be because individuals might be discouraged from migrating to cities with state surveillance owing to concerns about potential political costs, including the invasion of privacy (Kostka et al., 2023), erosion of personal freedoms (Best, 2010), and the risk of targeted suppression (Xu, 2021). In such situations, any positive or negative externalities generated by the migrant population would be absent, suggesting a lack of correlation between state surveillance and internal control.

Using a panel sample of 18,757 firm-years from 2007 to 2017, our DiD estimation reveals a positive association between the introduction of city-level state surveillance and corporate internal control. Specifically, firms located in cities that install surveillance

cameras experience a 2.7% increase in the internal control index compared with those in cities without state surveillance.

For more robust evidence, we conduct several checks to strengthen the credibility of our findings. First, we perform a parallel trends test, which reveals no distinguishable pre-surveillance trends in internal control between treated and control firms. Second, the positive impact of state surveillance remains consistent despite adopting alternative subsamples, addressing omitted-variable concerns, using propensity score matching (PSM) procedures, and employing alternative measures of internal control. Third, we employ a placebo test to eliminate the possibility that our main results are merely a statistical anomaly. Fourth, our triple-differences analysis allows us to conclude that the effect of state surveillance intensifies when firms are located in cities with lower internet penetration, higher institutional trust, or stronger communist legacies. Fifth, we identify a positive and significant relationship between state surveillance and financial reporting.

Finally, we explore the potential mechanisms through which state surveillance positively impacts internal control. Our empirical investigations yield four key findings: First, crime rates significantly decrease following the introduction of state surveillance. Second, surveillance camera installations tend to increase local employment. Third, employee productivity in internal control improves after the city is surveilled. Fourth, firms are inclined to hire more qualified staff in the post-surveillance period. In summary, these findings establish that state surveillance enhances corporate internal control by attracting domestic migrants, ultimately leading to increased employee productivity and a supply of qualified staff.

The study contributes to the literature in three key ways: First, it complements the growing body of accounting literature that examines the determinants of internal control, a critical factor in reporting quality (Doyle et al., 2007a; 2007b). Our findings highlight state surveillance as a significant driver of corporate internal control. Second, while previous research on state surveillance has primarily focused on how government monitoring affects public security (Kao and Sapp, 2022; Alsan et al., 2023) and generates political costs (Xu, 2021; Kostka et al., 2023), we expand this literature by providing novel evidence that state surveillance improves internal control by enhancing employee productivity and supplying competent workers. Third, despite more than 30 countries procuring or developing digital surveillance tools by the end of 2018, governments in other parts of the world remain cautious about following suit. This hesitancy is partly due to a lack of scholarly work on the economic consequences of state surveillance. From this perspective, our results offer valuable insights for policymaking.

The remainder of this paper is organized as follows. Section 2 provides an overview of institutional backgrounds, reviews related literature, and develops the main hypothesis. Section 3 outlines our sample selection, variable measurement, and baseline specifications. Section 4 presents our empirical findings. Finally, Section 5 concludes the paper.

## 2. Institutional Background, Literature Review, and Hypothesis Development

### *2.1 China's State Surveillance*

China's extensive state surveillance campaign commenced as early as 1998 with the Golden Shield Project (GSP) by the Ministry of Public Security. The project seeks to establish a domestic informatization network that assists the central police in strengthening

control, expediting responsiveness, and enhancing crime-fighting capacities (Walton, 2001). This comprehensive digital platform connects national, regional, and local public security bureaus and eventually integrate with online government databases, evolving into a nationwide surveillance and filtering system.

Owing to its enormous scale and intricate intranet infrastructure, the GSP is being implemented in two distinct stages. In 2005, Chinese authorities completed the first stage, which involved compiling comprehensive population databases, establishing identity tracking systems, and developing internet monitoring programs. The local-level population database encompasses five crucial dimensions of information management: security, criminality, immigration, detention and re-education, and traffic. To monitor migrant populations, the identity tracking system has been deployed in various public places, including hotels, transportation terminals, ticket offices, and internet cafes. The internet surveillance tool is employed to track key websites, social media platforms, and online forums. This capability assists local law enforcement in assessing public sentiments and identifying IP addresses.

The second stage of the GSP began in the late 2000s with the aim of enhancing the surveillance network by integrating street security cameras. To achieve this, the central government embarks on nationwide installation efforts, including initiatives such as the 3111 Initiative, the Safe Cities project, the Skynet project, and the Rural Sharp Eyes project. Once equipped with facial recognition and artificial intelligence capabilities, these street cameras enable the police to track the real-time movements of residents (Liu and Wang, 2017). For the purposes of our study, we focus on the 3111 Initiative, which provides a unique opportunity to implement our empirical identification strategy. This city-level

initiative allows us to match it with the location of a firm's headquarters. Additionally, its staggered implementation enables us to compare cities with and without the surveillance system, using the DiD framework.

The 3111 Initiative, also known as the City Alarm and Surveillance Camera Pilot Project, was implemented in three waves (Xu, 2021). The first wave covered Beijing, Hangzhou, Jinan, and Suzhou, with their surveillance systems ready in 2008. The second wave saw street cameras put into operation in 22 cities by 2010. The third wave, concluding in 2012, extended surveillance camera coverage to an additional 148 cities.[1] Table 1 provides a list of cities included in the three waves of street camera installation.

**[Insert Table 1 Here]**

*2.2 Literature Review*

2.2.1 Research on State Surveillance

State surveillance is defined as government actions involving the collection and processing of personal data by monitoring human activities through advanced information and communication technology (Xu et al., 2022). Past research on state surveillance can be categorized into two groups: studies that investigate the consequences of state surveillance and those that explore public opinion about it.

The former focuses on societal benefits and costs. State surveillance has been found to improve personal safety (Kao and Sapp, 2022), protect public health (Eck and Hatz, 2020), safeguard national security (Davis and Silver, 2004), and enhance social welfare

[1] The number of locations in the third wave differs from Xu (2021) because we focus on the cities instead of the counties/districts.

(Alsan et al., 2023). This suggests that it can help maintain social order and stability by preventing and combating crime. However, despite these benefits, the widespread government monitoring has negative consequences. In response to the rapid expansion of surveillance capabilities, citizens are increasingly concerned about privacy infringement (Kostka et al., 2023), the erosion of core values in civil society (Best, 2010), targeted repression of dissent (Xu, 2021), and political threats (Gohdes, 2019). These potential concerns can translate into significant political costs for individuals.

The latter explores the factors influencing public willingness to tolerate state surveillance. Residents offer significant support for these measures for various reasons, including the fear of terrorist attacks (Lewis, 2005), political trust in governments (Trudinger and Steckermeier, 2017), the convenience of daily life (Kostka, 2019), privileged social status (Dietrich and Crabtree, 2019), perceived police legitimacy (Gurinskaya, 2020), information control and framing (Guriev and Treisman, 2020), right-wing authoritarian views (Peng, 2022), and positive state media coverage (Xu et al., 2022). Collectively, these factors motivate individuals to trade some of their civil liberties in exchange for enhanced public security and societal well-being.

### 2.2.2 Research on Internal Control

Another strand of literature relevant to our study explores the determinants of internal control, which can be categorized into five main categories: auditor attributes, analyst-related characteristics, culture, product market competition, and regulatory environments. First, regarding audit-related characteristics, the quality of internal control relies on auditor expertise (Chen et al., 2016), auditor reputation (Khlif and Samaha, 2016), auditor effort (Hogan and Wilkins, 2008), and auditor tenure (Chen et al., 2016). Second,

a higher level of financial analyst following contributes to improved internal control by constraining managerial opportunistic behavior (Mao and Yu, 2015). Third, the effectiveness of internal control is negatively associated with individualism/power distance but positively related to uncertainty avoidance (Kanagaretnam et al., 2016). Fourth, empirical evidence regarding the role of product market competition in internal control is mixed. Kim and Kim (2015) find a negative effect of product market competition in the U.S., whereas Zhang and Chen (2016) identify a positive impact using Chinese data. Fifth, concerning regulations, Sarens and Christopher (2010) observe that the internal control system improves when corporate governance guidelines place particular emphasis on internal control.

*2.3 Hypothesis Development*

As mentioned previously, state surveillance contributes to personal security and social stability by deterring criminal activities. Given that social order is not an inherent characteristic of autocratic regimes, Chinese citizens place significant emphasis on public safety (Su et al., 2022). In this context, security concerns may incentivize internal migration to cities equipped with street cameras. In line with Peri (2016), domestic migrants are likely to generate two positive externalities.

First, considering the general inclination to seek secure living environments, we propose that a city under state surveillance can attract a well-educated, extensively trained, and highly skilled labor force. As argued by Hunt and Gauthier-Loiselle (2010), these capable migrants contribute to mutual learning through social interactions, facilitating the acquisition of professional knowledge and practical experience by local employees. In essence, this knowledge spillover generates learning opportunities that enhance labor

productivity (Moretti, 2004). Likewise, accounting staff can acquire relevant competencies for implementing effective internal control through these learning spillovers. This perspective aligns with the views of Doyle et al. (2007a), who stress the indispensability of qualified personnel for establishing a successful internal control system.

Meanwhile, China comprises 56 ethnic groups spread across 31 provinces, each with its unique identity, language, and religion. As noted by Ottaviano and Peri (2006), the convergence of migrant workers from diverse backgrounds gives rise to cultural diversity, which carries economic value. In essence, local labor productivity is enhanced by the synergies resulting from complementary inputs from culturally diverse individuals (Trax et al., 2015). The impact of cultural diversity likely extends to an internal control team, where skill complementarities enable members with varying cultural backgrounds to perform their roles more effectively. In aggregate, knowledge spillovers and skill complementarities make accounting employees more productive in implementing internal control policies and procedures.

Second, agglomeration externalities may come into play when a continuous influx of the domestic population into a safe city significantly influences its labor market (Chassamboulli and Palivos, 2014). Owing to internal economies of scale, a firm's productivity increases with factors such as city size (Moomaw, 1981), industry employment (Henderson, 1986), and labor intensity (Ciccone and Hall, 1996). The underlying rationale is that ongoing immigration helps shape a thicker labor market by expanding the local talent pool. In this context, firms find it easier to recruit and retain a sufficient number of qualified staff, ensuring effective reviews and timely remedies for material weaknesses in internal control (Ge and McVay, 2005). Conversely, a shortage of

capable employees may lead to a lack of segregation of duties, increasing the risk of internal control breaches. Therefore, domestic migrants, driven by safety concerns, may contribute to a larger pool of qualified talent, ultimately benefiting the quality of internal control.

Based on this discussion, we deduce that internal control improves in a firm headquartered in cities under camera surveillance, which leads to the following hypothesis in null form:

*H1: State surveillance positively impacts internal control.*

Conversely, there is a possibility that labor migration to a city under street camera surveillance can lead to negative externalities (Peri, 2016). One feasible consequence is an increase in property prices and rental expenses, which is equivalent to a reduction in real wages. For instance, Saiz (2007) has documented a positive relationship between immigration and housing rents. The rising cost of living may encourage the exodus of local talent. Consequently, the influx of competent workers may reverse, making it more challenging to recruit professional employees suitable for internal control roles. With a shortage of qualified employees, we anticipate a deterioration in the firm's internal control in a city under state surveillance. We formalize these arguments in our alternative hypothesis below:

*H1A: State surveillance negatively impacts internal control.*

Finally, individuals might initially have little incentive to relocate to a city with surveillance cameras owing to the unpredictable risks involved, such as privacy infringement (Kostka et al., 2023), loss of freedom (Best, 2010), and political suppression

(Xu, 2021). These potential political costs would likely prevent the occurrence of either positive or negative externalities. Following this line of reasoning, we predict an insignificant impact of state surveillance on internal control.

## 3. Research Design

### *3.1 Data and Sample Selection*

We compile our initial sample, which includes all A-share public firms in China from 2007 to 2017, from three sources. The internal control index is obtained from the DIB dataset, the camera installation year for each city is extracted from Xu (2021), and accounting, financial, and economic data are downloaded from the China Stock Market and Accounting Research (CSMAR) database. Our analysis begins in 2007, which is when the DIB dataset first provides the internal control index. To avoid potential econometric issues associated with including observations too distant from the event (Bertrand et al., 2004), we set the end of our sample period as 2017.

Table 2 Panel A provides details of our sample selection process. We begin with the initial sample, which comprises 25,747 firm-years. Subsequently, we exclude stocks subject to special treatment (2,026), firms in the financial sector (741), and observations with missing values for essential variables (4,223). This results in our final main sample, which comprises 18,757 firm-years across 2,369 unique firms.

**[Insert Table 2 Here]**

### *3.2 Variable Measurement*

#### 3.2.1 Measuring State Surveillance

Based on the implementation schedule of the 3111 Initiative (refer to Table 1), we initially identify a treated firm as one that has its headquarters in a city under street camera surveillance. To capture the presence of state surveillance, we define an indicator variable called *SURVEILLANCE*. For treated firms, we set *SURVEILLANCE* to 1 for the period following the camera installation year and 0 for all other years. For non-treated firms, *SURVEILLANCE* is set to 0 for all years.

3.2.2 Measuring Internal Control

According to the dataset manual, DIB assesses corporate internal control quality by establishing a point-based system using publicly available information, such as internal control assessment reports. Aligned with the COSO framework, this assessment focuses on five key dimensions of internal control: internal environment, risk assessment, control activity, information and communication, and internal monitoring. Each dimension is graded after evaluating a firm's performance in that specific aspect. The maximum point allocation for each dimension is as follows: internal environment (19), risk assessment (11), control activity (14), information and communication (6), and internal monitoring (16). The internal control index is then computed by summing the points across these five dimensions, resulting in a range from 0 to 66. To create our dependent variable, *INTERNAL CONTROL*, we take the natural logarithm of 1 plus the internal control index.

*3.3 Baseline Models*

Our research setting is analogous to that of Bertrand and Mullainathan (2003) because multiple shocks originate from a large number of cities that introduce surveillance cameras at different time points within our sample period. Consequently, we investigate

our main hypothesis by establishing the DiD framework. In this model, we estimate the following baseline regression equation, which aims to explore the association between state surveillance and internal control:

$$INTERNAL\ CONTROL_{i,t+1} = \alpha + \beta * SURVEILLANCE_{i,t} + Controls + Fixed\ Effects + \varepsilon_{i,t} \quad (1)$$

where $INTERNAL\ CONTROL_{i,t+1}$ represents internal control quality for firm *i* in year *t+1*, and $SURVEILLANCE_{i,t}$ denotes whether the headquarter of firm *i* is affected by state surveillance in year *t*.

*Controls* are a series of control variables that have explanatory power for *INTERNAL CONTROL*. As in Doyle et al. (2007a), we account for firm-level controls, including *FIRM SIZE* (the natural logarithm of total assets), *FIRM AGE* (the natural logarithm of the firm age), *LOSS* (an indicator equal to 1 for the loss-making firm), *Z-SCORE* (Altman's (1986) Z-score), *SUBSIDIARY* (the natural logarithm of the number of subsidiaries of a firm), and *FOREIGN BUSINESS* (an indicator equal to 1 if the firm runs a business abroad), CEO-level controls, involving *CEO AGE* (the natural logarithm of the CEO age), *CEO GENDER* (an indicator equal to 1 if the CEO is male), *FUNCTIONAL BACKGROUND* (the number of the CEO's prior functional backgrounds), *OVERSEAS EXPERIENCE* (an indicator equal to 1 if the CEO has overseas working experiences), *ACADEMIC EXPERIENCE* (an indicator equal to 1 if the CEO has academic working experiences), and *FINANCE EXPERIENCE* (an indicator variable equal to 1 if the CEO has finance working experiences), board-level controls, encompassing *DIRECTOR BOARD SIZE* (the natural logarithm of the number of members in a board of directors), *SUPERVISORY BOARD SIZE* (the natural logarithm of the number of members in a

supervisory board), and *COMMITTEE* (the natural logarithm of the number of established committees), and city-level controls, such as *LOCAL GDP* (the natural logarithm of a city's gross domestic product). All variables are defined in Appendix 1.

Following the approach of Li et al. (2021), we include firm, industry, city, and year fixed effects (denoted as *Fixed Effects*) to generalize the DiD setting. For hypothesis testing, we cluster standard errors at the firm level. As specified in Eq. (1), the crucial coefficient, $\beta$, enables us to assess the impact of state surveillance on internal control.

### *3.4 Descriptive Statistics*

Table 2 Panel B provides the descriptive statistics for all variables used in our baseline model. The variable *SURVEILLANCE* has a mean of 0.53, indicating that 53% of the firm-year observations are affected by state surveillance at various time points during our sample period. Consistent with previous studies (Lennox and Wu, 2022; Chen, 2023), the mean of *INTERNAL CONTROL* is 3.37, with a standard deviation of 0.47. Additionally, the average total assets value is RMB 3.8 million ($e^{22.05}$). Among our sample firms, 12% experience a financial loss, while 40% of them engage in business operations in foreign countries.

## 4. Empirical Results

### *4.1 Correlations*

Table 3 displays the correlation matrix for all baseline variables. Notably, the correlation coefficient between *INTERNAL CONTROL* and *SURVEILLANCE* is positive and significant, aligning with hypothesis ***H1***. Furthermore, the absolute values of correlations among the explanatory variables are generally not extreme, with the majority

being smaller than 0.20. These findings suggest that multicollinearity is unlikely to affect our subsequent statistical inferences.

**[Insert Table 3 Here]**

*4.2 Timing of State Surveillance*

Following the approach of Athey and Imbens (2022), the DiD test relies on the crucial assumption that a city's installation of surveillance cameras in a given year should be exogenous. In other words, our identification strategy could face challenges if the timing of state surveillance is predictable. To address this concern, we employ two empirical methods to validate this assumption, as presented in Table 4

**[Insert Table 4 Here]**

First, we employ a city-year OLS model to investigate whether a city's characteristics in a particular year can predict its installation of street cameras in the following year. To do this, we create a dummy variable, *INSTALLATION YEAR*, which takes the value of 1 for the year when surveillance cameras are installed in a city and 0 for all other years. Our explanatory variables of interest include *AVERAGE INTERNAL CONTROL* (the average *INTERNAL CONTROL* at the city level), *LOCAL GDP*, *GDP FROM SECOND INDUSTRY* (the second-industry weight of a city's gross domestic product), *GDP FROM THIRD INDUSTRY* (the third-industry weight of a city's gross domestic product), *POPULATION* (the natural logarithm of a city's total population), *POPULATION DENSITY* (the natural logarithm of a city's total population per square kilometer), *EMPLOYMENT* (the natural logarithm of a city's total employment), *INDUSTRIAL OUTPUT* (the natural logarithm of a city's industrial output), *FIXED ASSET*

*INVESTMENT* (the natural logarithm of a city's fixed asset investment), *FISCAL EXPENDITURE* (the natural logarithm of a city's fiscal expenditure), *R&D EXPENDITURE* (the natural logarithm of a city's R&D expenditure), *MOBILE USER* (the natural logarithm of the number of mobile users in a city), and *INTERNET USER* (the natural logarithm of the number of internet users in a city). We also include city and year fixed effects. In Column (1), we present the regression results, where all estimated coefficients remain insignificant across the board. Economically, these city characteristics are unable to predict the timing of state surveillance, providing evidence that the installation year is, to some extent, random.

Second, we utilize a Weibull hazard model, similar to the approach taken by Piotroski and Zhang (2014). In this model, we define the "failure event" as the installation of surveillance cameras in a specific city. Similarly, we create a city-year panel, removing treated cities from the sample after the implementation of state surveillance. In this setup, the dependent variable is *INSTALLATION YEAR*, while the independent variables are the same as those used in the previous OLS model. Despite estimating the Weibull hazard model in Column (2), we once again fail to find significant effects of city-specific characteristics. These findings collectively provide evidence that supports the exogeneity of state surveillance

*4.3 Impact of State Surveillance*

To examine the impact of state surveillance, we implement the baseline DiD model with five different specifications, as presented in Table 5. In each of these regressions, we consider firm, industry, city, and year fixed effects. Across all columns, we consistently observe a positive and statistically significant coefficient of interest. This finding indicates

that a firm's internal control system becomes more effective following the introduction of state surveillance.

**[Insert Table 5 Here]**

In Column (1), we only incorporate the treatment variable. We observe the coefficient on *SURVEILLANCE* is 0.033 and significant at the 5% level. Moving to Column (2), where we introduce firm-level controls, the coefficient remains positive and statistically significant. The inclusion of CEO-level controls in Column (3) produces similar results. Even when we extend the regression to include board-level features in Column (4), the DiD estimate maintains its positive sign and significance. In the full regression in Column (5), the key coefficient is 0.027, with a t-statistic of 2.120. In economic terms, the impact of state surveillance is substantial and meaningful. For instance, relative to firms located in cities without state surveillance, the installation of street cameras is associated with an increase in *INTERNAL CONTROL* by 0.027. This increase is equivalent to 3.5% ($e^{0.027}/e^{3.37}$) of the mean internal control index as shown in Table 2 Panel B. Therefore, the positive relationship between *SURVEILLANCE* and *INTERNAL CONTROL* in Table 5 provides support for ***H1***.

Furthermore, the estimates for several control variables are compatible with findings in previous literature (Doyle et al., 2007a). We find *that INTERNAL CONTROL* is negatively correlated with *FIRM AGE, LOSS,* and *SUBSIDIARIES,* while it is positively associated with *COMMITTEES*. In other words, firms tend to have better internal control quality when they are younger, profitable, have fewer subsidiaries, and establish stronger corporate governance.

*4.4 Parallel Trends*

To ensure the reliability of our DiD methodology, we examine whether parallel trends exist before the installation of street cameras. When this assumption holds, treated and non-treated firms should exhibit the same time trend in internal control in the absence of state surveillance. Following the approach of Bertrand and Mullainathan (2003), we assess pre-treatment trends by creating seven indicator variables: *SURVEILLANCE-3* (3 years before camera installation), *SURVEILLANCE-2* (2 years before camera installation), *SURVEILLANCE-1* (1 year before camera installation), *SURVEILLANCE0* (the year of camera installation), *SURVEILLANCE1* (1 year after camera installation), *SURVEILLANCE2* (2 years after camera installation), and *SURVEILLANCE3+* (3 or more years after camera installation). We replace *SURVEILLANCE* with these indicators in Eq. (1) and then replicate the baseline analysis presented in Table 6.

**[Insert Table 6 Here]**

Regardless of the model specifications, the coefficients of *SURVEILLANCE-3*, *SURVEILLANCE-2*, and *SURVEILLANCE-1* consistently lack statistical significance. These insignificant lead effects suggest that parallel trends are maintained in our context of multiple camera installations. These findings offer three important implications. First, treated firms are unlikely to predict the installation of street cameras. Second, even if some treated firms anticipate state surveillance, improvements in public safety in their home cities do not occur until the surveillance is actually implemented. Third, the observed impact of state surveillance may not result from a central government response to internal control activities, further reducing concerns about reverse causality. In summary, the results presented in Table 6 indicate that the evolution of internal control for treated firms

mirrors that of non-treated firms in the pre-surveillance period, thus confirming the validity of the parallel trends assumption.

*4.5 Robustness Checks*

We conduct several robustness tests to further examine the reliability of our main findings, as shown in Table 7. First, following Flammer and Kacperczyk (2016), in Subsample 1 (Column 1), we remove cities that were never treated to mitigate potential biases stemming from unobservable differences between treated and non-treated firms. Second, to address concerns related to firm-year concentration in highly developed regions, Subsample 2 (Column 2) excludes firms headquartered in first-tier cities (Beijing, Shanghai, Guangzhou, and Shenzhen). Third, in an effort to tackle endogeneity issues, we create two subsamples in Columns 3 and 4. Subsample 3 excludes third-wave cities where camera installation might be more predictable at a later stage. Subsample 4 eliminates neighboring cities once a focal city is surveilled. Despite the use of these alternative subsamples, the positive impact of state surveillance on internal controls persists across all specifications in Columns 1 to 4. These results confirm that our main findings are not contingent on the specific sample selection.

**[Insert Table 7 Here]**

To further alleviate concerns about endogeneity, we employ a lagged outcome model, which allows us to account for potential omitted variables (Xu, 2021). In this model, we introduce the lagged dependent variable into the main regression. The re-estimation results in Column (5) demonstrate that our baseline findings remain robust and unaffected by these adjustments.

Next, we create a PSM sample to solve the potential incomparability issue between treated and non-treated firms. Initially, we conduct a city-year probit regression of *SURVEILLANCE* using the explanatory variables [2] outlined in Subsection 4.2. The resulting propensity scores help implement a one-to-one nearest-neighbor matching procedure, allowing us to identify non-treated city-years for each treated city-year.[3] In Column (6), we repeat the main analysis using the PSM sample. Once again, the coefficients of interest are significantly positive, consistent with those presented in Table 5.

Finally, our proxy for internal control may be contentious due to its subjective nature. Inspired by Doyle et al. (2007a), we introduce an alternative measure in Column (7). Specifically, we code an indicator variable, *INTERNAL CONTROL WEAKNESS*, which takes the value of 1 if internal control weakness is reported and 0 otherwise. By definition, *INTERNAL CONTROL WEAKNESS* is inversely related to *INTERNAL CONTROL*. In line with our expectations, we observe a negative and significant coefficient on *SURVEILLANCE*. The evidence presented in Table 7 re-confirms the robustness of our main findings.

*4.6 Placebo Tests*

To rule out the possibility that the observed effect is purely coincidental, we execute a placebo test. In this test, we assign a pseudo-state surveillance year to each city, randomly

[2] These city-level variables include *AVERAGE INTERNAL CONTROL*, *LOCAL GDP*, *GDP FROM SECOND INDUSTRY*, *GDP FROM THIRD INDUSTRY*, *POPULATION*, *POPULATION DENSITY*, *EMPLOYMENT*, *INDUSTRIAL OUTPUT*, *FIXED ASSET INVESTMENT*, *FISCAL EXPENDITURE*, *R&D EXPENDITURE*, *MOBILE USER*, and *INTERNET USER*.

[3] The unreported result shows that there is no significant univariate comparison between treated and non-treated cities following the PSM procedure.

selected from the actual years of camera installation without replacement. Based on these pseudo-years, we re-estimate the main regression and record the key coefficient associated with *SURVEILLANCE*. We repeat this process 1,000 times, resulting in a set of pseudo-coefficients.

Figure 1 illustrates the distribution of pseudo coefficients, along with the actual estimate from Column (5) in Table 5. In the placebo regression, the distribution of pseudo coefficients has a mean of 0 and a standard deviation of 0.010. Notably, the true estimate of *SURVEILLANCE* falls in the far-right tail of this distribution. Specifically, among the 1,000 pseudo coefficients generated, 997 of them are smaller than the actual estimate of 0.027. This placebo test strongly suggests that our main findings are not a result of random chance. It underscores the role of state surveillance in enhancing corporate internal control.

**[Insert Figure 1 Here]**

*4.7 Heterogeneous Treatment Effects*

To further handle the omitted-variable issue, we extend our analysis by examining heterogeneity in the treatment effect through a triple-differences analysis. This approach is valuable because omitted variables often correlate with the linear term rather than the interaction term (Raddatz, 2006). In Table 8, we explore three sources of heterogeneity that could potentially moderate the treatment effect.

**[Insert Table 8 Here]**

First, building on earlier research (Edmond, 2013; Cantoni et al., 2017), the Internet provides easy and rapid access to online content that may contradict government narratives. Against this backdrop, local officials may fail to convince people that the installation of

street cameras primarily serves to enhance security. To some extent that is true, we expect the treatment effect weakens in cities with deeper internet penetration. To measure internet penetration, we use the ratio of internet users to the total population in a city, denoted as *INTERNET PENETRATION*. In our analysis, we include *SURVEILLANCE*INTERNET PENETRATION* and *INTERNET PENETRATION* as additional variables and re-estimate the main regression in Column (1). As expected, the coefficient on the interaction term is negative and statistically significant, indicating that the impact of state surveillance is less prominent in cities with more mature internet infrastructure.

Second, institutional trust plays a crucial role in shaping public perceptions of government policies (Hetherington and Husser, 2012). When citizens trust the government, they are more likely to perceive its policies positively, leading to better policy outcomes. In line with this reasoning, we hypothesize that the treatment effect of state surveillance intensifies in regions with higher levels of institutional trust. To quantify institutional trust, we use the provincial trustworthiness index (*INSTITUTIONAL TRUST*), sourced from the Report of the Business Environment Index for China's Provinces (Liu et al., 2022). Although the index data is available for 2006, 2008, 2010, and 2012, we fill in the gaps for other years using the following approach: i) we set the index for 2007, 2009, and 2011 to the mean of the values for the two adjacent years, and ii) we use the 2012 index to represent the years 2013–2017. We introduce two new variables, *SURVEILLANCE*INSTITUTIONAL TRUST* and *INSTITUTIONAL TRUST*, into Eq. (1) and re-estimate the model in Column (2). Notably, our results show a positive and statistically significant impact of the interaction term, suggesting that a higher level of institutional trust amplifies the observed treatment effect.

Third, according to Kao and Sapp (2022), public support for state surveillance can be influenced by cultural values. China's contemporary history is marked by various regional communist legacies that have left a lasting impact on the beliefs, values, and behaviors of individuals in different provinces (Wang et al., 2019). Essentially, when a province falls under Communist control, local citizens tend to adopt stronger communist ideologies and are more likely to support the central authority of the party. In this context, we hypothesize that the treatment effect of state surveillance is more pronounced in provinces with stronger communist legacies. Drawing from Wang et al. (2019), we operationalize communist legacy (*COMMUNIST LEGACY*) as the number of months between the founding date of the People's Republic of China (PRC) in October 1949 and the liberation time of each province. [4] In Column (3), we incorporate *SURVEILLANCE*COMMUNIST LEGACY* and *COMMUNIST LEGACY* into the baseline model. The coefficient is estimated to be 0.007 and statistically significant at the 1% level. These results provide evidence that state surveillance has a stronger impact in provinces with more robust communist legacies.

*4.8 Consequences to Financial Reporting*

This analysis allows us to conclude that state surveillance indeed leads to an improvement in internal control. Building on the insights of Doyle et al. (2007b), it is worth noting that accrual quality is closely related to the quality of internal control over financial reporting. In line with this perspective, we pose an intriguing question: Does state surveillance have any economic implications for financial reporting? Addressing this

[4] *COMMUNIST LEGACY* is positive (negative) when a province is liberated before (after) the founding of the PRC.

question enables us to offer additional evidence that supports the positive relationship between state surveillance and internal control.

We identify four proxies for financial reporting based on prior literature (Francis and Michas, 2013; McNichols, 2002): absolute values of discretionary accruals (*DISCRETIONARY ACCRUAL*), standard deviation of abnormal working capital accruals (*WORKING CAPITAL ACCRUAL*), a dummy variable indicating modified auditor opinions (*MODIFIED AUDITOR OPINION*), and another dummy variable representing financial violations (*FINANCIAL VIOLATION*). By replacing *INTERNAL CONTROL* with these measures in Eq. (1), we conducted the main regression presented in Table 9 to investigate the impact of state surveillance on financial reporting. Across all measures of financial reporting, the coefficient for *SURVEILLANCE* is consistently negative and statistically significant. These results indicate that firms located in cities with state surveillance tend to engage less in earnings management, receive fewer modified auditor opinions, and have fewer financial violations. In essence, state surveillance appears to have a positive influence on financial reporting, which is a direct outcome of improved internal control.

**[Insert Table 9 Here]**

*4.9 Channel Analyses*

Table 10 helps us disentangle the potential channels through which the main association is justified. In line with our rationale, the impact of state surveillance is primarily attributed to the positive externalities generated by domestic migrants who are motivated by the pursuit of public security.

**[Insert Table 10 Here]**

*4.9.1 Evidence on Public Safety and Labor Migration*

We begin by investigating whether state surveillance has a positive impact on public safety, which is a fundamental prerequisite for population influx and the resulting externalities. To measure public safety, we collect data on the number of criminal arrests per 10,000 inhabitants (*CRIME RATE*) from the Procuratorial Yearbook of China to proxy for public safety.[5] In our panel regression analysis, we regress *CRIME RATE* on *SURVEILLANCE* and other relevant determinants of crime rates, as commonly done in previous studies (e.g., Cheong and Wu, 2015). These determinants include *WAGE* (the natural logarithm of a city's average salary), *LOCAL GDP*, *FOREIGN DIRECT INVESTMENT* (the natural logarithm of a city's foreign direct investment), *POPULATION DENSITY*, and *EDUCATIONAL EXPENDITURE* (the natural logarithm of a city's educational expenditure). In addition, we account for city and year fixed effects. Panel A, Column (1) presents the regression results, which show a negative and significant coefficient on *SURVEILLANCE*. These findings indicate that state surveillance is associated with a reduction in the crime rate, leading to an overall improvement in local public safety

We then investigate whether state surveillance has the effect of attracting migrant workers. While direct data on internal migration is not available, we shift our focus to local employment as a proxy for the impact of domestic migration. We conjecture that when

[5] Due to the unavailability of city-level data, our analysis adopts the provincial crime rate, which may represent the general situation of public safety for a specific city in a given province.

workers constantly migrate to a city, it results in an increase in labor supply at the market equilibrium, leading to a rise in local employment levels. To test this hypothesis, we establish a city-year panel model, regressing *EMPLOYMENT* on several key variables, including *SURVEILLANCE, WAGE, LOCAL GDP, FOREIGN DIRECT INVESTMENT*, *POPULATION*, and *FIXED ASSET INVESTMENT*. In Panel A, Column (2), our analysis reveals a coefficient of 0.106 on *SURVEILLANCE*, which is statistically significant at the 1% level. This finding supports the notion of a positive association between state surveillance and local employment. This indirect evidence suggests that cities with state surveillance are more likely to attract domestic migrants.

*4.9.2 Evidence on Migration Externalities*

As discussed previously, the migration of populations is believed to generate two positive externalities that enhance the effectiveness of internal controls. First, it can increase employee productivity. Second, it can supply a sufficient number of qualified staff. We now aim to empirically examine whether the presence of state surveillance significantly impacts individual externalities

First, we assess the impact of state surveillance on employee productivity. Following Schoar (2002), we employ a log-linear Cobb-Douglas production function as our initial specification. In our case, we consider *INTERNAL CONTROL* as the dependent variable, in contrast to net income.

$$INTERNAL\ CONTROL_{i,t} = \beta_0 + \beta_1 CAPITAL_{i,t} + \beta_2 LABOR_{i,t} + \beta_3 TECHNOLOGY_{i,t} + Controls + Fixed\ Effects + \varepsilon_{i,t} \quad (2)$$

where $CAPITAL_{i,t}$ is the natural logarithm of fixed assets for firm *i* in year *t* (capital factor), $LABOR_{i,t}$ is the natural logarithm of total employees for firm *i* in year *t* (labor factor), and $TECHNOLOGY_{i,t}$ is the natural logarithm of R&D expenditures plus 1 for firm *i* in year *t* (technology factor). We proceed by including the same set of control variables (*Controls*) from Eq. (1) and fixed effects for the firm, industry, city, and year (*Fixed Effects*). For each industry-year combination, we conduct the regression outlined in Eq. (2) and extract the coefficient for the labor factor ($\beta_2$), which we interpret as a measure of employee productivity (*EMPLOYEE PRODUCTIVITY*). Subsequently, we replicate our primary analysis, replacing *INTERNAL CONTROL* with *EMPLOYEE PRODUCTIVITY* in Eq. (1). As shown in Panel B Column (1), the estimate for *SURVEILLANCE* is significantly positive, indicating that state surveillance impacts internal controls by enhancing employee productivity.

Second, if another positive externality emerges in a city under surveillance, it could result in an abundance of skilled labor in the local job market. Consequently, we anticipate that the number of qualified staff in firms would increase following the implementation of state surveillance. To capture qualified staff, we employ the natural logarithm of the count of employees with backgrounds in accounting or finance (*QUALIFIED STAFF*). We place *QUALIFIED STAFF* as the dependent variable in Eq. (1) and re-run the regression in Panel B Column (2). Our analysis reveals a positive coefficient for *SURVEILLANCE*, which is statistically significant at the 5% level. In economic terms, this suggests that firms tend to hire additional qualified personnel after the introduction of state surveillance. This, in turn, ensures the effective execution of internal control procedures and policies.

## 5. Conclusion

Political science literature has increasingly concentrated on the implications of state surveillance, and we extend this research into the realm of accounting by examining its effects on internal control. To establish causality, we leverage a quasi-experimental setting in China, where the installation of street cameras in cities occurs at different times. Our findings reveal a noteworthy enhancement in corporate internal control subsequent to the implementation of state surveillance in cities, relative to cities without such surveillance.

We perform a series of tests to validate the causal interpretation of our findings. First, the parallel-trends test indicates that internal control evolves similarly between firms in cities with late surveillance camera installation and those without such installation. Second, our results remain robust across various subsamples, methods to address omitted-variable problems, PSM, and alternative internal control measures. Third, placebo tests suggest that our findings are unlikely to be due to chance. Fourth, our analysis of heterogeneous treatment effects reveals that state surveillance magnifies its impact on internal control in cities with lower internet penetration, higher institutional trust, or stronger communist legacies. Lastly, we find a positive relationship between state surveillance and financial reporting, further confirming the reliability of our main results.

We also document supporting evidence through channel analyses: i) the crime rate decreases after the installation of street cameras; ii) local employment increases following camera surveillance implementation; iii) state surveillance enhances employee productivity in terms of internal control; and iv) firms in surveilled cities tend to hire more qualified personnel. These findings align with the idea that state surveillance leads to improved corporate internal control by enticing domestic migrants, resulting in increased employee productivity and access to skilled staff.

This study provides valuable insights in the context of the expanding realm of digital surveillance. Government initiatives designed to enhance citizen safety and national security have tangible and unintended economic ramifications for a firm's internal control system. These findings carry particular relevance and timeliness in the ongoing global discourse surrounding state surveillance practices.

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Table 1 Three Waves of Surveillance Camera Installation

| First-Wave Cities in 2008 | Second-Wave Cities in 2010 | Third-Wave Cities in 2012 | | | |
|---|---|---|---|---|---|
| Beijing | Anshan | Anqing | Hezuo | Nanping | Tongchuan |
| Hangzhou | Anyang | Anshun | Hohhot | Nantong | Weinan |
| Jinan | Baotou | Baoding | Huaian | Nanyang | Wenzhou |
| Suzhou | Daqing | Bengbu | Huaibei | Ningbo | Wuhu |
| | Datong | Benxi | Huainan | Ordos | Wuxi |
| | Deyang | Bozhou | Huangshan | Panjin | Xiamen |
| | Dongguan | Cangzhou | Huizhou | Panzhihua | Xi'an |
| | Dunhua | Changchun | Huludao | Pingdingshan | Xiangyang |
| | Haikou | Changzhi | Hulunbeir | Pingliang | Xianyang |
| | Hengyang | Changzhou | Huzhou | Pingxiang | Xiaogan |
| | Karamay | Chaoyang | Jiamusi | Puyang | Xingtai |
| | Langfang | Chengde | Ji'an | Qiandongnan Miao and Dong Autonomous Area | Xinxiang |
| | Ma'anshan | Chengdu | Jiangmen | Qinhuangdao | Xinyang |
| | Shihezi | Chifeng | Jiaozuo | Qiqihar | Xuancheng |
| | Tianjin | Chizhou | Jiaxing | Quanzhou | Xuchang |
| | Wuhan | Chongqing | Jincheng | Qujing | Xuzhou |
| | Xingyi | Chuzhou | Jingdezhen | Quzhou | Ya'an |
| | Xining | Dalian | Jinhua | Sanmenxia | Yancheng |
| | Xinyu | Dandong | Jinzhong | Sanming | Yangzhou |
| | Yan'an | Erenhot | Jinzhou | Sanya | Yichun |
| | Yulin | Fangchenggang | Jiujiang | Shanghai | Yinchuan |
| | Zhangye | Foshan | Kaifeng | Shangqiu | Yingkou |
| | | Fushun | Kunming | Shangrao | Yingtan |
| | | Fuxin | Leshan | Shaoxing | Yuxi |
| | | Fuyang | Lhasa | Shenyang | Zhangjiakou |
| | | Fuzhou | Lianyungang | Shenzhen | Zhangzhou |
| | | Fuzhou | Liaoyang | Shigatse | Zhaoqing |
| | | Ganzhou | Linfen | Shijiazhuang | Zhengzhou |
| | | Golmud | Lishui | Shuzhou | Zhenjiang |
| | | Guang'an | Liupanshui | Suihua | Zhongshan |
| | | Guangzhou | Longyan | Suqian | Zhoukou |
| | | Guiyang | Lu'an | Taiyuan | Zhoushan |
| | | Haibei Tibetan Autonomous Area | Luoyang | Taizhou | Zhuhai |
| | | Hainan Tibetan Autonomous Area | Luzhou | Taizhou | Zhumadian |
| | | Handan | Mianyang | Tangshan | Zibo |
| | | Hebi | Nanchang | Tianshui | Ziyang |
| | | Hengshui | Nanjing | Tieling | Zunyi |

Note: This table provides the city in three waves of surveillance camera installation.

# Table 2 Sample Selection and Summary Statistics

**Panel A: Sample Selection**

| | Firm-Year Observations |
|---|---|
| Initial sample including A-share public firms from 2007 to 2017 | 25,747 |
| Less: Stocks subject to special treatment | (2,026) |
| Less: Firms in the financial sector | (741) |
| Less: Observations with missing values for essential variables | (4,223) |
| Final sample | 18,757 |
| Number of unique firms | 2,369 |

**Panel B: Summary Statistics**

| | Mean | Std. Dev. | P25 | Median | P75 |
|---|---|---|---|---|---|
| *INTERNAL CONTROL* | 3.37 | 0.47 | 3.22 | 3.53 | 3.67 |
| *SURVEILLANCE* | 0.53 | 0.50 | 0.00 | 1.00 | 1.00 |
| *FIRM SIZE* | 22.05 | 1.33 | 21.14 | 21.88 | 22.78 |
| *FIRM AGE* | 2.66 | 0.42 | 2.40 | 2.71 | 2.94 |
| *LOSS* | 0.12 | 0.32 | 0.00 | 0.00 | 0.00 |
| *Z-SCORE* | 12.16 | 524.26 | 2.01 | 3.70 | 7.14 |
| *SUBSIDIARY* | 2.46 | 1.03 | 1.79 | 2.48 | 3.14 |
| *FOREIGN BUSINESS* | 0.40 | 0.49 | 0.00 | 0.00 | 1.00 |
| *CEO AGE* | 3.88 | 0.13 | 3.81 | 3.89 | 3.97 |
| *CEO GENDER* | 0.94 | 0.23 | 1.00 | 1.00 | 1.00 |
| *FUNCTIONAL BACKGROUND* | 1.70 | 0.90 | 1.00 | 2.00 | 2.00 |
| *OVERSEAS EXPERIENCE* | 0.06 | 0.24 | 0.00 | 0.00 | 0.00 |
| *ACADEMIC EXPERIENCE* | 0.15 | 0.36 | 0.00 | 0.00 | 0.00 |
| *FINANCE EXPERIENCE* | 0.05 | 0.21 | 0.00 | 0.00 | 0.00 |
| *DIRECTOR BOARD SIZE* | 2.16 | 0.20 | 2.08 | 2.20 | 2.20 |
| *SUPERVISORY BOARD SIZE* | 1.27 | 0.28 | 1.10 | 1.10 | 1.61 |
| *COMMITTEE* | 1.58 | 0.14 | 1.61 | 1.61 | 1.61 |
| *LOCAL GDP* | 8.57 | 1.14 | 7.79 | 8.68 | 9.51 |

Note: This table provides the details of sample selection in Panel A and summary statistics in Panel B. All variables are defined in Appendix 1.

Table 3 Pearson Correlations

| | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *INTERNAL CONTROL* | (1) | | | | | | | | | | | | | | | | | |
| *SURVEILLANCE* | (2) | **0.43** | | | | | | | | | | | | | | | | |
| *FIRM SIZE* | (3) | **0.18** | **0.15** | | | | | | | | | | | | | | | |
| *FIRM AGE* | (4) | **0.14** | **0.20** | **0.13** | | | | | | | | | | | | | | |
| *LOSS* | (5) | **-0.10** | **-0.01** | **-0.11** | **0.07** | | | | | | | | | | | | | |
| *Z-SCORE* | (6) | **-0.02** | -0.00 | **-0.08** | -0.01 | -0.00 | | | | | | | | | | | | |
| *SUBSIDIARY* | (7) | **0.14** | **0.16** | **0.59** | **0.17** | **-0.08** | **-0.02** | | | | | | | | | | | |
| *FOREIGN BUSINESS* | (8) | **0.19** | **0.20** | **0.27** | 0.00 | **-0.06** | -0.01 | **0.38** | | | | | | | | | | |
| *CEO AGE* | (9) | **0.11** | **0.12** | **0.16** | **0.11** | -0.01 | 0.00 | **0.10** | **0.03** | | | | | | | | | |
| *CEO GENDER* | (10) | -0.01 | -0.01 | **0.03** | **-0.03** | **0.02** | 0.00 | 0.00 | 0.01 | **0.03** | | | | | | | | |
| *FUNCTIONAL BACKGROUND* | (11) | **0.34** | **0.21** | **0.07** | **0.07** | 0.00 | 0.00 | **0.04** | **0.11** | 0.00 | 0.00 | | | | | | | |
| *OVERSEAS EXPERIENCE* | (12) | **0.07** | **0.08** | -0.00 | **-0.04** | **-0.03** | -0.00 | **0.03** | **0.16** | **-0.04** | -0.01 | **0.08** | | | | | | |
| *ACADEMIC EXPERIENCE* | (13) | **0.13** | **0.11** | **-0.06** | **-0.07** | **-0.05** | 0.00 | 0.00 | **0.10** | **0.12** | -0.00 | **0.12** | **0.09** | | | | | |
| *FINANCE EXPERIENCE* | (14) | **0.02** | **0.02** | **-0.01** | **0.03** | 0.00 | 0.00 | **0.03** | 0.00 | **-0.05** | **-0.02** | **0.16** | **0.04** | 0.01 | | | | |
| *DIRECTOR BOARD SIZE* | (15) | **-0.07** | **-0.11** | **0.25** | 0.00 | **-0.01** | **-0.03** | **0.09** | **-0.03** | **0.05** | **0.06** | **-0.05** | **-0.05** | **-0.07** | **-0.04** | | | |
| *SUPERVISORY BOARD SIZE* | (16) | **-0.09** | **-0.13** | **0.25** | **0.06** | **0.04** | -0.01 | **0.08** | **-0.10** | **0.04** | **0.05** | **-0.06** | **-0.09** | **-0.10** | **-0.05** | **0.34** | | |
| *COMMITTEE* | (17) | **0.15** | **0.07** | **0.06** | **0.05** | **0.01** | 0.00 | **0.03** | **0.04** | **0.02** | 0.00 | **0.08** | **-0.02** | **0.02** | 0.01 | **0.02** | **0.02** | |
| *LOCAL GDP* | (18) | **0.24** | **0.44** | **0.14** | **0.10** | **-0.08** | 0.00 | **0.22** | **0.24** | **0.09** | **-0.02** | **0.13** | **0.09** | **0.11** | **0.03** | **-0.08** | **-0.12** | -0.01 |

Note: This table reports the Pearson correlation among baseline variables. Values in bold denote statistical significance at the 10% level or better. All variables are defined in Appendix 1.

# Table 4 Timing of State Surveillance

| | **OLS Model** | | **Weibull Hazard Model** | |
|---|---|---|---|---|
| | *INSTALLATION YEAR* | | *INSTALLATION YEAR* | |
| | (1) | | (2) | |
| | Coef. | t-stat | Coef. | z-stat |
| *AVERAGE INTERNAL CONTROL* | -0.039 | -0.180 | 0.250 | 0.430 |
| *LOCAL GDP* | 0.035 | 0.050 | -0.147 | -0.170 |
| *GDP FROM SECOND INDUSTRY* | -0.428 | -0.640 | 0.139 | 0.540 |
| *GDP FROM THIRD INDUSTRY* | -1.282 | -1.470 | 0.459 | 0.480 |
| *POPULATION* | -0.954 | -0.460 | -0.646 | -1.430 |
| *POPULATION DENSITY* | 0.311 | 1.120 | 0.099 | 0.560 |
| *EMPLOYMENT* | -0.455 | -1.420 | -0.134 | -0.390 |
| *INDUSTRIAL OUTPUT* | -0.069 | -0.220 | -0.012 | -0.030 |
| *FIXED ASSET INVESTMENT* | 0.130 | 0.390 | 0.369 | 0.950 |
| *FISCAL EXPENDITURE* | -0.279 | -0.360 | 0.408 | 0.790 |
| *R&D EXPENDITURE* | -0.039 | -0.130 | 0.099 | 0.440 |
| *MOBILE USER* | 0.271 | 0.600 | 0.396 | 0.820 |
| *INTERNET USER* | -0.093 | -0.750 | -0.056 | -0.160 |
| | | | | |
| Constant | Yes | | No | |
| City Fixed Effects | Yes | | No | |
| Year Fixed Effects | Yes | | No | |
| | | | | |
| Observations | 1,230 | | 920 | |
| Adjusted $R^2$ | 0.439 | | | |
| $Chi^2$ | | | 18.870 | |

Note: This table examines whether various city-level variables affect the timing of surveillance camera installation. Column (1) performs the OLS regression, while Column (2) estimates the Weibull Hazard model. $^{*}$, $^{**}$, and $^{***}$ denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

# Table 5 Impact of State Surveillance

| | *INTERNAL CONTROL* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | (2) | | (3) | | (4) | | (5) | |
| | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE* | 0.033** | 2.460 | 0.029** | 2.240 | 0.029** | 2.240 | 0.029** | 2.230 | 0.027** | 2.120 |
| Firm-Level Controls | | | | | | | | | | |
| *FIRM SIZE* | | | 0.013 | 1.500 | 0.013 | 1.540 | 0.012 | 1.400 | 0.013 | 1.600 |
| *FIRM AGE* | | | -0.284*** | -7.390 | -0.283*** | -7.360 | -0.280*** | -7.310 | -0.279*** | -7.310 |
| *LOSS* | | | -0.065*** | -5.850 | -0.065*** | -5.830 | -0.065*** | -5.850 | -0.064*** | -5.830 |
| *Z-SCORE* | | | -0.001 | -0.790 | -0.001 | -0.660 | -0.001 | -0.930 | -0.001 | -0.990 |
| *SUBSIDIARY* | | | -0.030*** | -3.660 | -0.030*** | -3.640 | -0.030*** | -3.620 | -0.030*** | -3.720 |
| *FOREIGN BUSINESS* | | | 0.017 | 1.550 | 0.017 | 1.520 | 0.018 | 1.570 | 0.017 | 1.520 |
| CEO-Level Controls | | | | | | | | | | |
| *CEO AGE* | | | | | -0.058* | -1.780 | -0.057* | -1.760 | -0.054 | -1.660 |
| *CEO GENDER* | | | | | 0.017 | 0.840 | 0.015 | 0.740 | 0.015 | 0.770 |
| *FUNCTIONAL BACKGROUND* | | | | | -0.002 | -0.300 | -0.002 | -0.300 | -0.002 | -0.330 |
| *OVERSEAS EXPERIENCE* | | | | | 0.002 | 0.130 | 0.003 | 0.160 | 0.002 | 0.120 |
| *ACADEMIC EXPERIENCE* | | | | | 0.002 | 0.190 | 0.002 | 0.150 | 0.001 | 0.080 |
| *FINANCE EXPERIENCE* | | | | | -0.014 | -0.780 | -0.014 | -0.810 | -0.015 | -0.840 |
| Board-Level Controls | | | | | | | | | | |
| *DIRECTOR BOARD SIZE* | | | | | | | 0.019 | 0.670 | 0.019 | 0.670 |
| *SUPERVISORY BOARD SIZE* | | | | | | | 0.004 | 0.120 | 0.004 | 0.110 |
| *COMMITTEE* | | | | | | | 0.119*** | 3.090 | 0.117*** | 3.030 |
| City-Level Controls | | | | | | | | | | |
| *LOCAL GDP* | | | | | | | | | -0.113** | -2.470 |
| Constant | Yes | | Yes | | Yes | | Yes | | Yes | |
| Firm Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| Industry Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| Observations | 18,757 | | 18,757 | | 18,757 | | 18,757 | | 18,757 | |
| Adjusted $R^2$ | 0.608 | | 0.614 | | 0.614 | | 0.614 | | 0.615 | |

Note: This table examines whether state surveillance affect corporate internal control. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

# Table 6 Parallel Trends

| | *INTERNAL CONTROL* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | | (2) | | (3) | | (4) | | (5) | |
| | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE-3* | 0.036 | 1.250 | 0.033 | 1.140 | 0.033 | 1.140 | 0.031 | 1.080 | 0.026 | 0.910 |
| *SURVEILLANCE-2* | 0.042 | 1.430 | 0.038 | 1.280 | 0.038 | 1.280 | 0.036 | 1.200 | 0.031 | 1.040 |
| *SURVEILLANCE-1* | 0.054 | 1.640 | 0.046 | 1.500 | 0.046 | 1.500 | 0.043 | 1.400 | 0.040 | 1.300 |
| *SURVEILLANCE0* | 0.084*** | 2.950 | 0.074*** | 2.620 | 0.074*** | 2.610 | 0.071** | 2.530 | 0.067** | 2.370 |
| *SURVEILLANCE1* | 0.096*** | 3.120 | 0.085*** | 2.780 | 0.085*** | 2.780 | 0.082*** | 2.710 | 0.078** | 2.550 |
| *SURVEILLANCE2* | 0.087*** | 2.820 | 0.075** | 2.470 | 0.075** | 2.470 | 0.073** | 2.390 | 0.068** | 2.220 |
| *SURVEILLANCE3+* | 0.093*** | 2.940 | 0.084*** | 2.680 | 0.083*** | 2.670 | 0.080** | 2.580 | 0.075** | 2.390 |
| Firm-Level Controls | No | | Yes | | Yes | | Yes | | Yes | |
| CEO-Level Controls | No | | No | | Yes | | Yes | | Yes | |
| Board-Level Controls | No | | No | | No | | Yes | | Yes | |
| City-Level Controls | No | | No | | No | | No | | Yes | |
| Constant | Yes | | Yes | | Yes | | Yes | | Yes | |
| Firm Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| Industry Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | |
| Observations | 18,757 | | 18,757 | | 18,757 | | 18,757 | | 18,757 | |
| Adjusted $R^2$ | 0.609 | | 0.614 | | 0.614 | | 0.615 | | 0.615 | |

Note: This table examines whether the parallel-trend assumption holds in our DiD setting. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

## Table 7 Robustness Checks

| | Drop Never-Treated Cities | | Drop First-Tier Cities | | Drop Third-Wave Cities | | Drop Neighboring Cities | | Include Lagged Dependent Variables | | Adopt PSM Procedures | | Alternative Measures of Internal Control | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *INTERNAL CONTROL* (1) | | *INTERNAL CONTROL* (2) | | *INTERNAL CONTROL* (3) | | *INTERNAL CONTROL* (4) | | *INTERNAL CONTROL* (5) | | *INTERNAL CONTROL* (6) | | *INTERNAL CONTROL WEAKNESS* (7) | |
| | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE* | 0.029** | 2.050 | 0.029* | 1.880 | 0.086** | 2.040 | 0.125** | 2.470 | 0.021* | 1.880 | 0.036** | 2.070 | -0.053*** | -3.520 |
| Firm-Level Controls | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| CEO-Level Controls | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Board-Level Controls | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| City-Level Controls | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Constant | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Firm Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Industry Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | | Yes | |
| Observations | 15,357 | | 13,562 | | 4,103 | | 3,642 | | 17,675 | | 7,069 | | 18,757 | |
| Adjusted $R^2$ | 0.619 | | 0.611 | | 0.598 | | 0.595 | | 0.502 | | 0.427 | | 0.362 | |

Note: This table examines whether the effect of state surveillance survives from various robustness checks. Column (1)-(4) drops the never-treated cities, first-tier cities, third-wave cities, and neighboring cities, respectively. Column (5) controls for the lagged dependent variable. Column (6) adopts the PSM procedure. Column (7) uses the alternative measure of internal controls. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

Table 8 Heterogeneous Treatment Effects

| | *INTERNAL CONTROL* (1) | | *INTERNAL CONTROL* (2) | | *INTERNAL CONTROL* (3) | |
|---|---|---|---|---|---|---|
| | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE* | 0.061*** | 3.970 | -0.038** | -2.030 | -0.021 | -1.230 |
| *SURVEILLANCE x INTERNET PENETRATION* | -0.007*** | -4.200 | | | | |
| *INTERNET PENETRATION* | -0.001 | -0.090 | | | | |
| *SURVEILLANCE x INSTITUTIONAL TRUST* | | | 0.127** | 2.170 | | |
| *INSTITUTIONAL TRUST* | | | -0.156* | -1.720 | | |
| *SURVEILLANCE x COMMUNIST LEGACY* | | | | | 0.007*** | 4.230 |
| *COMMUNIST LEGACY* | | | | | -0.003 | -0.360 |
| Firm-Level Controls | Yes | | Yes | | Yes | |
| CEO-Level Controls | Yes | | Yes | | Yes | |
| Board-Level Controls | Yes | | Yes | | Yes | |
| City-Level Controls | Yes | | Yes | | Yes | |
| Constant | Yes | | Yes | | Yes | |
| Firm Fixed Effects | Yes | | Yes | | Yes | |
| Industry Fixed Effects | Yes | | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | | Yes | |
| Observations | 17,747 | | 18,599 | | 14,319 | |
| Adjusted $R^2$ | 0.621 | | 0.614 | | 0.608 | |

Note: This table examines the heterogeneous treatment effect of state surveillance on corporate internal control. Column (1), (2), and (3) focus on internet penetration, institutional trust, and communist legacy, respectively. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

Table 9 Consequences to Financial Reporting

| | *DISCRETIONARY ACCRUAL* (1) | | *WORKING CAPITAL ACCRUAL* (2) | | *MODIFIED AUDITOR OPINION* (3) | | *FINANCIAL VIOLATION* (4) | |
|---|---|---|---|---|---|---|---|---|
| | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE* | -0.009** | -2.510 | -0.782* | -1.690 | -0.005* | -1.730 | -0.018* | -1.770 |
| Firm-Level Controls | Yes | | Yes | | Yes | | Yes | |
| CEO-Level Controls | Yes | | Yes | | Yes | | Yes | |
| Board-Level Controls | Yes | | Yes | | Yes | | Yes | |
| City-Level Controls | Yes | | Yes | | Yes | | Yes | |
| Constant | Yes | | Yes | | Yes | | Yes | |
| Firm Fixed Effects | Yes | | Yes | | Yes | | Yes | |
| Industry Fixed Effects | Yes | | Yes | | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | | Yes | | Yes | |
| Observations | 18,587 | | 17,530 | | 18,757 | | 18,757 | |
| Adjusted $R^2$ | 0.011 | | 0.945 | | 0.085 | | 0.092 | |

Note: This table examines the consequences of state surveillance to financial reporting. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

# Table 10 Channel Analyses

**Panel A: Impact on Public Safety and Local Employment**

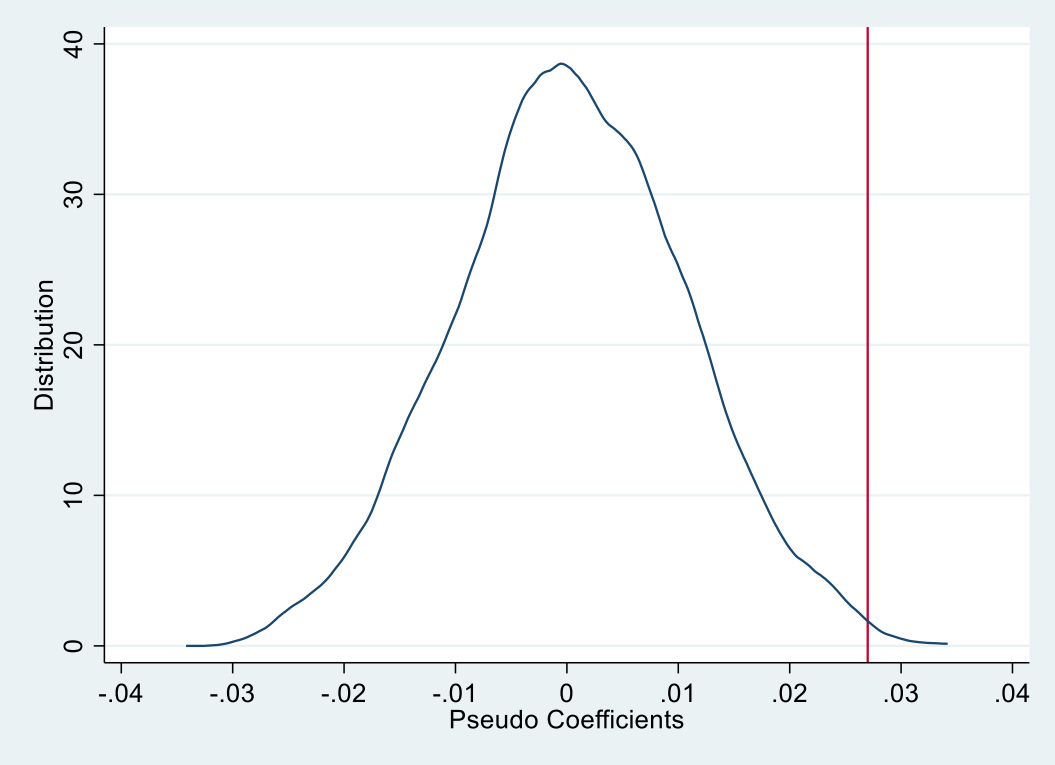
| | *CRIME RATE* (1) | | *EMPLOYMENT* (2) | |
|---|---|---|---|---|
| | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE* | -0.004** | -1.960 | 0.106*** | 3.600 |
| *WAGE* | -0.018*** | -3.090 | 0.065*** | 3.090 |
| *LOCAL GDP* | 0.018*** | 3.040 | 0.133** | 1.960 |
| *FOREIGN DIRECT INVESTMENT* | 0.002** | 2.370 | -0.003 | -0.320 |
| *POPULATION DENSITY* | 0.008** | 2.360 | | |
| *EDUCATIONAL EXPENDITURE* | -0.004** | -2.310 | | |
| *POPULATION* | | | 0.071*** | 2.850 |
| *FIXED ASSET INVESTMENT* | | | 0.039 | 0.820 |
| Constant | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | |
| Observations | 2,368 | | 2,280 | |
| Adjusted $R^2$ | 0.021 | | 0.945 | |

**Panel B: Impact on Employee Productivity and the Availability of Qualified Staff**

| | *EMPLOYEE PRODUCTIVITY* (1) | | *QUALIFIED STAFF* (2) | |
|---|---|---|---|---|
| | Coef. | t-stat | Coef. | t-stat |
| *SURVEILLANCE* | 0.019** | 2.190 | 0.058** | 1.980 |
| Firm-Level Controls | Yes | | Yes | |
| CEO-Level Controls | Yes | | Yes | |
| Board-Level Controls | Yes | | Yes | |
| City-Level Controls | Yes | | Yes | |
| Constant | Yes | | Yes | |
| Firm Fixed Effects | Yes | | Yes | |
| Industry Fixed Effects | Yes | | Yes | |
| City Fixed Effects | Yes | | Yes | |
| Year Fixed Effects | Yes | | Yes | |
| Observations | 18,703 | | 18,757 | |
| Adjusted $R^2$ | 0.124 | | 0.603 | |

Note: This table unpacks the underlying mechanism that underpins the documented association. Panel A assesses the effect of state surveillance on public safety and local employment. Panel B explores how state surveillance affects employee productivity and the availability of qualified staff. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in Appendix 1.

Figure 1 Placebo Tests




Note: This figure plots the distribution of pseudo coefficients from 1,000 bootstrap simulations of the baseline regression using the pseudo-state surveillance year.

# Appendix 1 Variable Definitions

| | Definition | Source |
|---|---|---|
| **Table 2, 3 & 5** | | |
| *INTERNAL CONTROL* | The natural logarithm of 1 plus the internal control index | DIB |
| *SURVEILLANCE* | An indicator variable equal to 1 for all years after the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *FIRM SIZE* | The natural logarithm of total assets | CSMAR |
| *FIRM AGE* | The natural logarithm of the firm age | CSMAR |
| *LOSS* | An indicator variable equal to 1 for the loss-making firm, and 0 otherwise | CSMAR |
| *Z-SCORE* | Altman's (1986) Z-score | CSMAR |
| *SUBSIDIARY* | The natural logarithm of the number of subsidiaries of a firm | CSMAR |
| *FOREIGN BUSINESS* | An indicator variable equal to 1 if the firm runs a business abroad, and 0 otherwise | CSMAR |
| *CEO AGE* | The natural logarithm of the CEO age | CSMAR |
| *CEO GENDER* | An indicator variable equal to 1 if the CEO is a male, and 0 otherwise | CSMAR |
| *FUNCTIONAL BACKGROUND* | The number of CEO prior functional backgrounds, which are split into nine categories: production, R&D, design, human resource, management, marketing, finance, accounting, and law | CSMAR |
| *OVERSEAS EXPERIENCE* | An indicator variable equal to 1 if the CEO has overseas working experiences, and 0 otherwise | CSMAR |
| *ACADEMIC EXPERIENCE* | An indicator variable equal to 1 if the CEO has academic working experiences, and 0 otherwise | CSMAR |
| *FINANCE EXPERIENCE* | An indicator variable equal to 1 if the CEO has finance working experiences, and 0 otherwise | CSMAR |
| *DIRECTOR BOARD SIZE* | The natural logarithm of the number of members in a board of directors | CSMAR |
| *SUPERVISORY BOARD SIZE* | The natural logarithm of the number of members in a supervisory board | CSMAR |
| *COMMITTEE* | The natural logarithm of the number of established committees | CSMAR |
| *LOCAL GDP* | The natural logarithm of a city's gross domestic product | CSMAR |
| **Table 4** | | |
| *INSTALLATION YEAR* | A dummy equal to 1 for the year when surveillance cameras are installed in a city, and 0 otherwise | Xu (2021) |
| *AVERAGE INTERNAL CONTROL* | The average *INTERNAL CONTROL* at the city level | CSMAR |
| *GDP FROM SECOND INDUSTRY* | The second-industry weight of a city's gross domestic product | CSMAR |
| *GDP FROM THIRD INDUSTRY* | The third-industry weight of a city's gross domestic product | CSMAR |
| *POPULATION* | The natural logarithm of a city's total population | CSMAR |
| *POPULATION DENSITY* | The natural logarithm of a city's total population per square kilometer | CSMAR |
| *EMPLOYMENT* | The natural logarithm of a city's total employment | CSMAR |
| *INDUSTRIAL OUTPUT* | The natural logarithm of a city's industrial output | CSMAR |
| *FIXED ASSET INVESTMENT* | The natural logarithm of a city's fixed asset investment | CSMAR |
| *FISCAL EXPENDITURE* | The natural logarithm of a city's fiscal expenditure | CSMAR |
| *R&D EXPENDITURE* | The natural logarithm of a city's R&D expenditure | CSMAR |
| *MOBILE USER* | The natural logarithm of the number of mobile users in a city | CSMAR |
| *INTERNET USER* | The natural logarithm of the number of internet users in a city | CSMAR |
| **Table 6** | | |
| *SURVEILLANCE-3* | An indicator equal to 1 for the third year or earlier before the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *SURVEILLANCE-2* | An indicator equal to 1 for the second year before the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *SURVEILLANCE-1* | An indicator equal to 1 for the year before the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *SURVEILLANCE0* | An indicator equal to 1 for the year in which the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *SURVEILLANCE1* | An indicator equal to 1 for the year after the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *SURVEILLANCE2* | An indicator equal to 1 for the second year after the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| *SURVEILLANCE3+* | An indicator equal to 1 for the third year or later after the surveillance camera is installed in a firm's home city, and 0 otherwise | Xu (2021) |
| **Table 7** | | |
| *INTERNAL CONTROL WEAKNESS* | An indicator equal to 1 if internal control weakness is reported, and 0 otherwise | CSMAR |
| **Table 8** | | |
| *INTERNET PENETRATION* | The ratio of internet users to the total population in a city | CSMAR |

| | | |
|---|---|---|
| *INSTITUTIONAL TRUST* | The provincial trustworthiness index, sourced from the Report of the Business Environment Index for China's Provinces. Although the index data is available for 2006, 2008, 2010, and 2012, we fill in the gaps for other years using the following approach: i) we set the index for 2007, 2009, and 2011 to the mean of the values for the two adjacent years, and ii) we use the 2012 index to represent the years 2013-2017 | Liu et al. (2022) |
| *COMMUNIST LEGACY* | The number of months between the founding date of the PRC in October 1949 and the liberation time of each province | Wang et al. (2019) |
| **Table 9** | | |
| *DISCRETIONARY ACCRUAL* | The absolute value of discretionary accruals, estimated following Francis and Michas (2013) | CSMAR |
| *WORKING CAPITAL ACCRUAL* | The standard deviation of abnormal working capital accruals, estimated following McNichols (2002) | CSMAR |
| *MODIFIED AUDITOR OPINION* | A dummy equal to 1 if the modified auditor opinion is issued, and 0 otherwise | CSMAR |
| *FINANCIAL VIOLATION* | A dummy equal to 1 if financial violations occur, and 0 otherwise | CSMAR |
| **Table 10** | | |
| *CRIME RATE* | The number of criminal arrests per 10,000 inhabitants | Procuratorial Yearbook of China |
| *WAGE* | The natural logarithm of a city's average salary | CSMAR |
| *FOREIGN DIRECT INVESTMENT* | The natural logarithm of a city's foreign direct investment | CSMAR |
| *EDUCATIONAL EXPENDITURE* | The natural logarithm of a city's educational expenditure | CSMAR |
| *EMPLOYEE PRODUCTIVITY* | The estimated coefficient for the labor factor in the log-linear Cobb-Douglas production function, where *INTERNAL CONTROL* is regressed on the natural logarithm of fixed assets (capital factor), the natural logarithm of total employees (labor factor), and the natural logarithm of R&D expenditure plus 1 (technology factor) as well as control variables in Eq. (1) | Estimation |
| *QUALIFIED STAFF* | The natural logarithm of the count of employees with backgrounds in accounting or finance | CSMAR |