State versus Market: China's Infrastructure Investment*

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Abstract

Amid growing global interest in state interventions, this paper examines the impact of Chinese government infrastructure investments on improving firm productivity, focusing on a policy that directed regional governments to foster a more conducive market environment for private enterprises. Our analysis reveals that the positive effect of infrastructure investment on firm productivity is increased by 42.5% for private firms in industries with improved market access and an even more striking 97.9% in provinces with reduced arbitrary fines. These findings underscore the complementary roles of state interventions and the development of market mechanisms in boosting firm productivity.

Keywords: State Intervention, Infrastructure, Marketization, Complementarity

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In the wake of the 2008 financial crisis, further intensified by the unprecedented global disruptions of the COVID-19 pandemic, the world has seen a dramatic re-evaluation of the role of state interventions in economic development. These significant events have fostered a renewed interest among nations in adopting more proactive stances in guiding their economies. This sentiment has transcended traditional economic divides, with countries—whether developed or developing—becoming more receptive to the idea of industrial policies, as recently reviewed by Juhász, Lane, and Rodrik (2023). Even the traditionally free-market economies like the U.S. and the European Union are adopting industrial policies to support and protect their domestic industries against external challenges.

Emerging economies are increasingly focusing on expansive infrastructure projects, from enhancing transportation networks to expanding digital connectivity. The justification for such infrastructure investments is well-established, highlighting their role in boosting firm productivity, catalyzing economic activity, and facilitating trade, as highlighted by Rodrik (1999), Aschauer (1989), and Stiglitz (1993). Moreover, Sanchez-Robles (1998), Demurger (2001), Calderon and Serven (2010), Sahoo and Dash (2012), and Kodongo and Ojah (2016) provide empirical evidence of the positive link between infrastructure development and economic growth, especially in economies where public capital is striving to reach a balanced "equilibrium level."[1]

However, this optimistic view is tempered by significant concerns about the implications of large-scale public investments. One critical issue is the potential for states to leverage substantial infrastructure spending as a facade, diverting attention from the crucial need to establish robust institutional frameworks that promote market mechanisms and protect private businesses. This concern is echoed by Nazmi and Ramirez (1997), Ramirez and Nazmi (2003), and Mitra (2006). Distinguished economists like Williamson (1985), North (1991), and Acemoglu and Robinson (2012) have emphasized that a vibrant market ecosystem is essential for the efficient allocation of resources. This raises a pivotal question: Can state-led infrastructure initiatives truly spur economic growth in the absence of a well-functioning market system?

[1] The social perspective, as discussed by Atkinson and Stiglitz (1980), suggests that government interventions, especially through State-Owned Enterprises (SOEs), are essential for addressing market failures. Stiglitz and Weiss (1981) further delve into these failures, highlighting situations like credit rationing due to imperfect information. Moreover, Greenwald and Stiglitz (1986) underscore the importance of intervention in the presence of externalities and other market inefficiencies.

In this paper, we address this issue by analyzing the effects of the Chinese government's considerable infrastructure investments on the productivity of private firms, which form a major segment of China's economy. As China transitioned from a centrally planned economy to a more market-oriented one, it has undertaken massive infrastructure projects, adopted broad industrial policies, and fostered the development of market mechanisms and private enterprise. This complex mix has ignited a vigorous debate among economists and policymakers about the roots of China's economic success: Is it a result of the extensive state interventions, or could China have reached even greater economic heights with less state involvement? Specifically, the discourse extends to the potential distortions introduced by government interventions in the world's second-largest economy, as discussed by Allen, Qian, and Qian (2005); Hsieh and Klenow (2009); Song, Storesletten, and Zilibotti (2011).

We leverage a pivotal policy change in China aimed at fostering a conducive market environment to examine the relationship between state-driven infrastructure investments and market development. In 2005, the Chinese government launched the landmark "36 Clauses" reform, marking a critical step towards forging a more favorable market environment. Among the 36 clauses, the "Market Entry Clause" is particularly noteworthy for its advocacy of equal market access for all types of economic entities. This clause was universally implemented by all provinces. It has been especially beneficial to private firms, affording them unprecedented entry into industries that were traditionally under the control of State-Owned Enterprises (SOEs). The effectiveness of this reform is reflected in the substantial decrease in the average asset ratio of SOEs, which fell from 29.8% in 2004 to 17.6% by 2009, with a more marked reduction observed in sectors previously dominated by SOEs.

We adopt a difference-in-differences (DID) approach to analyze how this policy change affects the efficacy of state-driven infrastructure investments in boosting private firm productivity. Our analysis focuses on the effects of city-level infrastructure investments on various measures of firm efficiency, such as Total Factor Productivity (TFP), Return on Assets (ROA), Operating Return on Assets (OROA), total sales, and sales per worker. We examine these metrics before and after the implementation of the "36 Clauses" within province-industry groups that were dominated by SOEs as of 2004. We anticipate that firms within these sectors would witness more significant improvements in productivity from infrastructure post-policy enactment.

Our firm-level regression analyses provide robust support for our hypothesis. We find that doubling infrastructure investment correlates with increases of 4% in TFP, 0.9% in ROA, 1.2% in OROA, 5.2% in total sales, and 5.1% in sales per worker. Moreover, the parallel trend assumption is validated, indicating no pre-policy differences between province-industry groups with varying levels of SOE dominance. Crucially, our analysis reveals that after the implementation of the policy, the beneficial impacts of infrastructure investment on TFP, ROA, OROA, total sales, and sales per worker are amplified by 42.5%, 66.67%, 75%, 38.5%, and 27.5%, respectively, in groups that were previously SOE-dominated.

We have also examined the impact of other clauses designed to improve different aspects of the market environment. Each province has implemented a unique set of these clauses in response to the central government's "36 Clauses". Notably, the "Arbitrary Penalty Clause", which aims to curtail arbitrary fines on firms, has shown positive outcomes. Utilizing a DID approach, we found that provinces adopting this clause in their provincial regulations witnessed a greater reduction in fines levied on firms, contributing to a better business environment. Furthermore, the DID analysis reveals that in these provinces, the beneficial impacts of infrastructure investments on firm productivity—across measures such as TFP, ROA, OROA, sales, and sales per worker—are notably magnified post-policy, relative to other provinces, by 97.9%, 127.3%, 87.5%, 95.2%, and 86.8%, respectively, similar to the effects observed with the "Market Entry Clause".

Our analysis also extends to the "Fiscal and Financial Clauses", "Tax Clause", and "Firm Right Clause", all of which have been found to positively support private firms and thus enhance firms' productivity gains from infrastructure investment. Conversely, the "Worker Right Clause" and the "Social Right Clause", aimed at promoting workers' rights and social welfare, potentially raising operational costs for firms, did not significantly affect productivity gains from infrastructure investments in our DID analysis. Collectively, our findings underscore the complementary roles of state-driven infrastructure investments and a conducive market environment in boosting the productivity of private firms, affirming our central hypothesis.

Our study contributes to the extensive body of literature investigating the impact of government intervention on the private sector, particularly in terms of productivity, investment, financing, and other corporate activities. Several prior studies, such as Stiglitz (1993), advocate for the beneficial spillovers of government intervention, whether through public investment or

fiscal policies, on the private sector. In the context of China, Ru (2018) shows that government-subsidized credit directed toward infrastructure projects can significantly boost the activities and performance of private firms. Furthermore, Banerjee, Qian, and Duflo (2020) identify moderate yet positive impacts of transportation infrastructure on China's GDP per capita, underscoring the potential for state intervention to enhance economic outcomes.[2]

Conversely, a segment of the academic community has highlighted the adverse crowd-out effects associated with government intervention. Aschauer (1989b) voiced early concerns about the potential of public investments to crowd out private investments, a view echoed in studies of government-subsidized credit and its crowding out effects on non-targeted sectors, as illustrated by Gale (1991) and Schwarz (1992)). Cohen, Coval, and Malloy (2011) further elucidated the crowding out effects of government spending on private sector investment and employment, using chairmanship shifts in the U.S. Congress as exogenous shocks. More recently, Ngo and Stanfield (2022) provided evidence that an increase in federal R&R spending directed towards government-dependent firms in the U.S. can result in a reduction in R&D expenditures among competing private firms.[3]

In China, the government's expansive ability to carry out capital-intensive infrastructure projects—ranging from roads and bridges to airports and ports—is noteworthy, partly due to its distinctive financial system, as discussed by Song and Xiong (2018). A prominent example of such intervention was the 4 trillion RMB stimulus package in 2008, which, according to studies by Liu et al. (2018) and Cong et al. (2019), led to a misallocation of credit, favoring inefficient SOEs at the expense of private firms. Huang, Pagano, and Panizza (2020) further demonstrate that local public debt in China can crowd out private firm investments, particularly affecting those that are credit-constrained. However, the literature also presents a spectrum of effects: Traum and Yang (2015), Ru (2017), and Miyamoto et al. (2018) have explored both the crowd-in and crowd-out effects, suggesting that the impact of government intervention on the private sector may vary under

[2] Lynde and Richmond (1992), Munnell (1992), Erenburg (1993), Bahmani-Oskooee (1999), Cohen and Paul (2004), Auerbach and Gorodnichenko (2012), Nakamura and Steinsson (2014), Adelino et al., (2017), Auerbach et al., (2020) provide evidence of the positive effects of government fiscal policies in other countries.

[3] Ramey and Shapiro (1998) and Burnside, Eichenbaum, and Fisher (2004) analyze crowding out effects observed in the context of government military spending, while Cutler and Gruber (1996) in the context of public insurance.

specific conditions. This body of research points to a more complex and nuanced understanding of the interplay between state interventions and private sector dynamics in China.

Our paper enriches the current academic discourse by illustrating that state interventions, through infrastructure investments, and the enhancement of marketization levels, as evidenced by a more favorable business environment for the private sector, act in a complementary fashion. This complementary interaction substantially boosts firm productivity and performance, highlighting the comprehensive advantages of synchronized policy measures in fostering economic development. This analysis becomes especially pertinent given China's recent policy shift from prioritizing market mechanisms to a stronger emphasis on assertive state interventions.

The remainder of this paper is structured as follows: Section I provides the institutional background of the "36 Clauses". Section II outlines a conceptual framework. Section III introduces the data and provides summary statistics. Section IV discusses the empirical findings. The paper concludes with Section V.

I. Institutional Background

Over the past four decades, beginning in the early 1980s, China has made a significant transition from a centrally planned economy to a hybrid model, blending extensive state interventions with extensive market mechanisms. A testament to these economic reforms is the meteoric rise of private firms. Encouraged and bolstered by the government, private enterprises have burgeoned and now hold a pivotal role in the Chinese economy, contributing to more than 50% of total tax revenues, 60% of GDP and fixed investment, and 80% of urban employment. Despite their significant contributions, private firms often grapple with disparities when juxtaposed with SOEs. Efforts to protect private business interests and improve their operational environment are continuously evolving.

Rooted in the historical dominance of the state-owned economy from the era before the reforms and further compounded by ingrained institutional biases against the private economy, the evolution of private enterprises faces significant challenges. Recognizing the pressing need to synchronize with the demands of China's rapidly expanding market economy, the State Council enacted a significant policy on February 25, 2005, titled "Several Opinions of the State Council on

Encouraging, Supporting, and Guiding the Development of the Non-public Economies such as Individual and Private Sectors". This policy, with its 36 stipulations, has been commonly referred to as the "36 Clauses".[4] The "36 Clauses" represent the first official document from the central government expressly intended to nurture the private sector since the founding of the People's Republic of China.

The "36 Clauses" span seven categories. The first category covers "Market Entry Clauses", which champion the integration of non-state entities into sectors historically monopolized by SOEs, spanning industries like finance, utilities, science, education, culture, health, and even national security. The second category includes the "Tax Clause", "Fiscal Clause" and "Financial Clause", which aim to reduce taxes, provide fiscal assistance, and ease external financial constraints for private sectors, respectively.[5] The third category concentrates on "optimizing government regulation and oversight", including the "Arbitrage Penalty Clause". This clause specifically addresses the widespread issues from the early 2000s pertaining to arbitrary fines and fees imposed on firms, especially private firms, which are particularly vulnerable. The fourth category aims to "strengthen the protection of corporate and labor rights", including the "Firm Right Clause", "Worker Right Clause" and "Social Protection Clause", which were introduced to safeguard corporate rights, workers' rights, and social welfare for employees. Our analysis will specifically examine the impacts of the clauses in these categories.[6]

In response to the "36 Clauses", provincial governments drafted specialized provisions tailored to their distinct economic landscapes. These regional regulations, while echoing the broad intent of the "36 Clauses", provide a nuanced framework for regional economic activities. The provincial provisions differ from each other in the implementation time and the inclusion of specific clauses.

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[4] State Council [2005] No.3. See https://www.gov.cn/zwgk/2005-08/12/content_21691.htm.

[5] Examples of the "Tax Clause" encompasses provisions like "exemption from taxes for the next several years" and "reduced tax rates under specific conditions". The "Fiscal Clause" involves measures such as the establishment of special funds and subsidies for private companies. The "Financial Clause" includes initiatives like "encouraging the banking sector to provide more credit to private firms" and "simplifying the application process and timeline for loan applications by private companies".

[6] The other three categories aim to 1) bolster the provision of social services; 2) enhance the quality and competitiveness of non-public enterprises; 3) raise public awareness and understanding of the policy.

We plan to employ the "36 Clauses" and its staggered implementations across provinces as shocks for changes in pro-business market environments. Our analysis will delve into how this policy shift influences the efficacy of infrastructure investments in enhancing firm productivity across diverse provinces and industries.

In Table A2 of the Online Appendix, we provide the release dates and administrative order numbers across all 31 provinces after the central government's announcement of the "36 Clauses". To assess provincial responses, we have defined several indicators: "*MarketEntry*", "*ArbitraryPenalty*", "*Financing*", "*FirmRight*", "*Tax*", "*WorkerRight*", and "*SocialProtection*". These indicators are designed to evaluate whether a province has adopted each of these clauses.

For example, the "*ArbitraryPenalty*" indicator assesses whether a province has implemented the "Arbitrary Penalty Clause" to address the issue of arbitrary fines through clear, actionable measures. Among the 31 provinces, 12 opted not to incorporate this clause into their regulations, whereas the others have clearly defined the activities that are regarded as arbitrary penalties and would be prohibited. Our later analysis reveals a significant reduction in fine-related revenues in provinces that adopted the "Arbitrary Penalty Clause," in contrast to those that did not.

The cornerstone of the policy, the "Market Entry Clauses", has been adopted by every province, specifically targeting sectors historically monopolized by SOEs and facilitating market access of non-state entities. Thus, the indicator "*MarketEntry*" treats those province-industry conglomerates that were predominantly controlled by SOEs in 2004. We expect these specific clusters to usher in significant market liberalization. As we will show later, empirical evidence unveils a notable shift post-enactment: the average SOE asset share across province-industry groups decreased from 29.8% in 2004 to 23.2% in 2006, further dwindling to 17.6% by 2009. When narrowing the lens to industries previously monopolized by SOEs, the SOE asset share was 62.8% in 2004, dropping to 48.1% in 2006 and further to 37.4% in 2009. These statistics underscore the effectiveness of the "Market Entry Clauses" in creating a more inclusive economic environment for private firms.

II. A Conceptual Framework

We present a straightforward conceptual framework to illustrate the complementarity between state-driven infrastructure investment and the cultivation of an environment conducive to businesses, all aimed at enhancing firm productivity. Consider a regional economy, region i, wherein a representative individual firm operates based on the following production function:

$$Y_i = A_i G_i^{\alpha_G} K_i^{\alpha_K} L_i^{\alpha_L},$$

where Y_i is the firm's output, A_i is the firm's inherent productivity, G_i is the infrastructure investment made by the regional government, and K_i and L_i are the firm's capital and labor inputs. The parameters α_G, α_K, and α_L are all between 0 and 1.

In this formulation, G_i acts as a multiplier, enhancing the firm's effective productivity $A_i G^{\alpha_G}$. This production function has been used by Barro (1990) to analyze the macroeconomic effect of government spending. Song and Xiong (2023) have also used it to analyze local governments' infrastructure investment in China's hybrid economy. It is difficult for the private sector to provide infrastructure due to its nature as a public good. In contrast, the government can overcome this limitation by financing infrastructure through tax revenue, which is collected from the aggregate output and not from the use of public goods. For simplicity, we assume that the government collects a tax at a rate τ on each firm's output: τY_i.

Suppose that this representative firm chooses capital K_i at a cost of capital R, which is given by the national capital market equilibrium, and labor L at a competitive wage ϕ to clear a given local labor supply $\bar{L}$. Here, we implicitly assume that capital is mobile while labor is immobile. Alongside paying the official tax at a rate of τ, the firm also incurs an additional cost that is a fraction κ_i of the output. In the specific context of China, local governments have the discretion to impose fees on businesses to bridge their budgetary shortfalls. However, unchecked power can lead to potential abuses by local officials, who might levy excessive charges, leading to a heightened cost κ_i. The "Arbitrary Penalty Clause" of the "36 Clauses" aims to specifically curb such abuses. The other clauses may also reduce the effective operational costs faced firms.

Consequently, the representative firm's objective becomes:

$$\max_{K_i, L_i} \; (1 - \tau - \kappa_i) A_i G_i^{\alpha_G} K_i^{\alpha_K} L_i^{\alpha_L} - R K_i - \phi L_i.$$

The first order condition for K_i gives

$$K_i = \left(\frac{\alpha_K (1 - \tau - \kappa_i) A_i G_i^{\alpha_G} \bar{L}^{\alpha_L}}{R} \right)^{\frac{1}{1-\alpha_K}},$$

while the first order condition for L_i, together with labor market clearing condition $L_i = \bar{L}$, give,

$$\phi = \alpha_L (1 - \tau - \kappa_i) A_i G_i^{\alpha_G} K_i^{\alpha_K} \bar{L}^{\alpha_L - 1}.$$

Both K and ϕ increase with G_i but decrease with κ_i. That is, by boosting private firm productivity, the government's infrastructure investment galvanizes both firm investment and labor wages. Conversely, frictions in the business environment, represented by κ_i, act as a deterrent for firm investment and labor wages.

The resulting aggregate output is

$$Y_i = \left(\frac{\alpha_K (1 - \tau - \kappa_i)}{R} \right)^{\frac{\alpha_K}{1-\alpha_K}} A_i^{\frac{1}{1-\alpha_K}} G_i^{\frac{\alpha_G}{1-\alpha_K}} \bar{L}^{\frac{\alpha_L}{1-\alpha_K}}.$$

It is easy to verify that $\frac{\partial^2 Y_i}{\partial \kappa_i \partial G_i} < 0$. This implies that a reduction in κ_i amplifies the efficacy of G_i in bolstering both firm productivity and output, forming the central hypothesis of our empirical analysis.

III. Data and Summary Statistics

In this section, we describe the data used in our analysis and present some summary statistics.

A. Firm-level data

We extracted firm-level data from the Chinese Industry Census (CIC), as compiled by the Chinese National Bureau of Statistics (NBS). Recognized for its depth and scope, the CIC provides the most comprehensive coverage of Chinese manufacturing firms with annual sales over five million yuan. This dataset has been widely used by previous studies, such as those by Hsieh and Klenow (2009), Song, Storesletten, and Zilibotti (2011), and Ru (2018). This dataset is only available from 2000 to 2013, due to restrictions imposed by the NBS. The dataset included 800,983

manufacturing firms. Our main sample was constructed following a series of selection criteria. Firstly, to ensure the robustness of our analysis, we excluded industries that were intricately linked to the infrastructure sector.[7] Furthermore, due to concerns regarding the data quality for 2010, we omitted 2010 from our analysis. Additionally, given the Chinese government's enactment of the "New 36 Clauses" on May 13, 2010, we exclude the post-2009 period from our main sample to avoid confounding effects.[8] Lastly, as the "36 Clauses" primarily targeted China's non-public sectors, we further drop SOEs in the CIC data.[9] After these adjustments, the refined dataset encompassed 555,683 manufacturing firms, yielding 2,217,160 observations spanning from 2000 to 2009.

B. City-level Data

Our infrastructure investment data at the city level is derived from the China Urban Construction Statistical Yearbook. This source provides extensive coverage of infrastructure investments across all prefecture-level cities in China, with data starting from 2000. Furthermore, we embarked on a manual data collection exercise to obtain fine revenue at the city level, mining provincial China Statistical Yearbooks and city-level China Statistical Yearbooks for the period 2000 to 2009. Additionally, other city-specific metrics like population, GDP, and unemployment rates were sourced from CSMAR. We supplemented the missing data from CSMAR by using the CEIC dataset when feasible.

C. Summary Statistics

Table 1 presents summary statistics of our primary variables.[10] In Panel A, which centers on city-level variables, we observe that the mean infrastructure investment throughout our final dataset amounts to 1.52 billion yuan. The peak investment reported in this category is 21.64 billion yuan. In terms of fine revenue, averaged over all city-years, the figure stands at around 203 million yuan. The highest value recorded in this segment is nearly 1.34 billion yuan.

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[7] We specifically filtered out observations from industries coded as 44, 45, or 46 in the first two digits, which correspond to the electronic, gas, and water sectors, respectively.

[8] See https://www.gov.cn/zwgk/2010-05/13/content_1605218.htm. Our results remain consistent if we include the post-2009 period, namely the years 2011, 2012, and 2013.

[9] From 2000 to 2009, the SOEs approximately account for 16.1% of the whole sample. Our results are consistent if we include SOEs.

[10] Definitions for these variables can be found in Table A1 of the Online Appendix.

Panel B details firm-level attributes from the CIC dataset. On average, a firm holds assets valued at 49.51 million yuan, employs a workforce of approximately 191, and logs yearly sales nearing 62.78 million yuan. The average figures for *ROA*, *Tangibility*, and *Leverage* are 0.08, 0.35, and 0.55, respectively.

IV. Empirical Analysis

We leverage the "36 Clauses" as an exogenous impetus for fostering a pro-business market environment. We adopt a difference-in-differences approach to compare how the policy change affects the efficacy of the government's infrastructure investment in enhancing the productivity of private firms. Given the variability in the implementation of the "36 Clauses" across provinces, with each adopting a different set of clauses, we analyze the variations in productivity changes across provinces that have adopted a certain key clause and those that have not, allowing us to isolate the effects of individual clauses on firm productivity.

A. "Market Entry Clause"

As detailed in Section I, the "Market Entry Clause" stands out as the most pivotal component of the "36 Clauses". It promotes the entry of private enterprises into sectors traditionally held by monopolies or dominated mainly by SOEs. Despite its universal adoption across all provinces, there's a notable variation in their existing industry structures and the timing of implementation. With this context, we designate "*MarketEntry*" to treat those specific province-industry combinations that were characterized by monopolistic industries or sectors under significant SOE dominance as of the year 2004.[11]

Traditionally monopolized industries are identified as coal, petroleum and the manufacturing counterparts, mining, vehicle manufacturing, and the tobacco industry. Sectors dominated by SOEs are characterized as those province-industry groups where the ratio of SOE assets to total assets exceeded 50% in 2004. Our dataset has 1,052 province-industry groups, of which 355 are designated as treated. Of these treated combinations, 263 originate from traditionally monopolized

[11] We exclude industries such as finance and utilities from our analysis for two primary reasons. First, given that infrastructure investment serves as our principal explanatory variable, we omit utilities from our primary sample to sidestep potential confounding effects. Second, the CIC data is primarily tailored to capture the manufacturing sector in China, precluding our ability to delve into other sectors like finance, culture, and the like.

industries. Our results remain robust whether we evaluate traditionally monopolized industries or those sectors dominated by SOEs.

We posit that after a province unveils its provincial provision in response to the "36 Clauses", the "Market Entry Clause" would make the treated sectors more competitive, amplifying the influence of infrastructure investments in augmenting firm productivity in these industries.

To test this hypothesis, we estimate the following DID regression:

$$Y_{i,j,c,p,t} = \alpha + \beta_1 \times Treat_{j,p} + \beta_2 \times Post_{p,t} + \beta_3 \times Treat_{j,p} \times Post_{p,t} + \beta_4 \times Pre2_{p,t} + \beta_5 \times Pre1_{p,t} + \beta_6 \times Treat_{jp} \times Pre2_{p,t} + \beta_7 \times Treat_{jp} \times Pre1_{p,t} + \beta_8 \times LogInfra_{c,t} + \beta_9 \times Treat_{jp} \times LogInfra_{c,t} + \beta_{10} \times Post_{p,t} \times LogInfra_{c,t} + \beta_{11} \times Treat_{j,p} \times Post_{p,t} \times LogInfra_{c,t} + X \times Control + FEs + \epsilon_{it}. \quad (1)$$

The dependent variable $Y_{i,j,c,p,t}$ of firm *i* in industry *j*, city *c*, province *p* and in year *t* measures firm productivity. We have used three direct measures of firm productivity, including TFP, ROA, and OROA (i.e., operating return on assets). We have also used two less direct measures, such as the logarithm of firm sales and the logarithm of firm sales per employee.

$LogInfra_{c,t}$ is the natural logarithm of total infrastructure investment in city *c* and in year *t*. $Treat_{j,p}$ here refers to the dummy *MarketEntry*, which equals 1 for province-industry groups traditionally monopolized or whose SOE asset ratio is greater than 50% in 2004. $Post_{p,t}$ equals 1 if the year is in or after the year when the province has released its provincial provisions in response to the "36 Clauses". $Pre2_{p,t}$ ($Pre1_{p,t}$) is a year dummy indicating two (one) years before the shock took place in each province. We include these two dummies and their interaction with $Treat_{jp}$ to test the parallel trend prior to the policy shock.

We control for macroeconomic conditions in the past year, such as the natural logarithm of the total population, city GDP, budget revenue, and province-level unemployment rate. We also control for firm-level characteristics in the past year, including logarithm of total assets, leverage, and tangibility. Besides firm fixed effects and year fixed effects, we also include Province×Industry and Year×Industry fixed effects to further alleviate concerns that unobserved factors could influence our findings. The former high-dimensional fixed effects consider the

potential for firms within the same industry to experience differential treatment across provinces. For instance, an industry might receive substantial support in one province but limited backing in another. Conversely, the latter interaction fixed effects acknowledge that an industry's treatment might vary over the years. Moreover, we cluster the error terms at the city level for robustness.

In our regression analysis, we include only non-state firms because the "36 Clauses" primarily target China's non-public sector. Our findings also remain robust when we include SOEs in our regressions. We also omit data from the years after 2009 due to two primary considerations. First, in 2010, the Chinese central government introduced the "New 36 Clauses", aiming to further advance the non-public sector. To sidestep potential confounding influences, we exclude the period after 2009. Additionally, past studies, such as Ru (2017), have expressed reservations about the quality of CIC data from 2010 onwards. Nonetheless, our findings remain consistent even when including the post-2009 timeframe.

Table 2, Columns (1)-(5) report the regression results. First, it's worth noting that there is no pre-trend in our DID regressions. Specifically, all coefficients of $Treat_{j,p} \times Pre1_{p,t}$ and $Treat_{j,p} \times Pre2_{p,t}$ are statistically insignificant across Columns (1) through (5). This lends credence to the parallel trend assumption crucial to our DID analysis.

Second, across the five measures of firm productivity, all coefficients of $LogInfra$ are significantly positive, suggesting that the city-level infrastructure investments positively affect firms in the city. For example, in Column (1), the coefficient of $LogInfra$ is 0.04, statistically significant at the 5% level, suggesting that a 100% increase in infrastructure investment is associated with a four percentage point increase in TFP.

More interestingly, across Columns (1) to (5), we observe a significantly positive coefficient for $Treat_{jp} \times Post_{p,t} \times LogInfra_{c,t}$. This implies that subsequent to the policy changes brought by the “36 Clauses”, there is an amplification in the efficiency with which infrastructure investment boosts firm productivity in the treated industries. Taking Column (1) as an example, the coefficient stands at 0.017, statistically significant at the 1% level. Interpreting this post-policy change, the effect of infrastructure investment on firm TFP intensifies by an average of 42.5% (calculated as 0.017 divided by 0.04). Together, these statistically and economically significant

interaction effects confirm that the "Market Entry Clause" significantly enhances the efficacy of infrastructure investment in boosting firm productivity in the treated industries.

Our analysis further delves into the dynamics of our primary funding, reflected by the triple interaction terms. Particularly, we replace $Post_{p,t}$ in equation (1) with time dummies that indicate *i* years after the pivotal event, denoted as $window_i$. For instance, $window_1$ represents one year after each province establishing its own provisions. Figure 1 illustrates the dynamics and the 95% confidence intervals of the coefficients of $Treat_{j,p} \times window_i \times LogInfra_{c,t}$, when dependent variables are *TFP*, *ROA*, *OROA*, and *LogSales*, respectively.[12] The coefficients are insignificant from zero in all four years before the shock. Commencing from the shock year, the coefficients increase significantly, and the effects persist for four years. These dynamics vividly demonstrate the way in which the improved market environment strengthens the positive impact of infrastructure investment on firm productivity following the "36 Clauses".

B. Other Clauses

The "36 Clauses" also contain other clauses that aim to support non-state firms. To examine these other clauses, we also conduct regressions in which the province-industry level treatment *MarketEntry* in equation (1) is replaced by other province-level treatments defined in Section I and Table A2: *ArbitraryPenalty*, *Financing*, *Tax*, *FirmRight*, *WorkerRight*, and *SocialProtection*. A treatment dummy equals 1 for provinces that include the corresponding clause in their provincial provisions. We again posit that provinces that include the clause would experience greater improvement in the relevant field after the shock, thus amplifying the effect of infrastructure investment in boosting firm productivity.

Table 2, Columns (6)-(10) report the results of the regression in which the treatment is *ArbitraryPenalty*. *ArbitraryPenalty* is a dummy that equals 1 if the province responds to the "Arbitrary Penalty Clause" with a detailed implementation strategy to curb arbitrary fines. The results are consistent with the earlier results on the "Market Entry Clause". Firstly, there is no parallel trend, evidenced by insignificant coefficients of $Treat_p \times Pre1_{p,t}$ and $Treat_p \times Pre2_{p,t}$. Furthermore, infrastructure investments exert positive effects on firm productivity. For

[12] The sample only includes observations in the window [-4,3]. We also exclude $window_0$ as the benchmark. Other aspects of the regressions are exactly the same as equation (1).

example, in Column (6), the coefficient of $LogInfra$ is 0.047, which is significant at the 1% level, suggesting that a 100% increase in infrastructure investment leads to a 4.7% increase in TFP.

More importantly, all coefficients of $Treat_p \times Post_{p,t} \times LogInfra_{c,t}$ are significantly positive, corroborating our hypothesis that an improved market environment for private firms amplifies the efficiency of infrastructure investment in boosting firm productivity. For example, in Column (6), the coefficient of the triple interaction term is 0.046, suggesting a nearly 100% amplification in the efficiency of infrastructure investment when a province includes the "Arbitrary Penalty Clause" to discipline arbitrary penalties on private firms.

Table 3 reports the results from two other treatments: *Financing* and *Tax*. The results again show a significant triple interaction term, confirming that these clauses boost the effect of infrastructure investment on firm productivity. Table A3 in the Appendix also reports the consistent results when the treatment is *FirmRight,* a clause that promotes firm rights. However, Table A4 in the Appendix shows that the triple interaction terms for *WorkerRight* and *SocialProtection*, two clauses that require firms to offer better social protection to workers, such as pension, insurance, and housing allowances, are insignificant or even negative. These results are reasonable, as these provisions incur direct costs to firms, thus negatively impacting firm performance. We regard these regression results reported in Table A4 as placebo tests for our main analysis.

Taken together, our analysis shows that in the wake of improvements in the pro-business market environment, the positive effects of infrastructure investment on firm productivity are significantly enhanced. These results lend credence to a complementary relationship between infrastructure investment and the institutional environment that promotes market competition and protects private firms.

C. Improved Market Environment

A crucial assumption of our DID analysis is that the implementation of the "36 Clauses" leads to a more favorable market environment for private firms. We now explore this through four key dimensions that directly align with the specific clauses within the policy: (1) the reduction in SOE dominance, (2) the adjustment of fines imposed by local governments, (3) the alleviation of

external financing constraints for firms, and (4) the modification of corporate taxation. Each dimension corresponds to a particular clause aimed at addressing these specific areas.

Starting with the dimension of SOE dominance, we analyze the proportion of assets controlled by SOEs within each province-industry combination. The analysis is conducted through regressions at the province-industry-year level, structured as follows:

$$SOERatio_{j,p,t} = \alpha + \beta_1 \times Treat_{jp} + \beta_2 \times Post_{p,t} + \beta_3 \times Treat_{jp} \times Post_{p,t} + X \times Control_{p,t-1} + Province \times YearFE + YearFE. \quad (2)$$

Here, $SOERatio_{j,p,t}$ is the share of assets held by SOEs in industry j and province p. We examined two measures for $Treat_{jp}$: one is $MarketEntry_{jp}$ defined in Section IV.A, and the other alternate is $Monopoly_{jp}$, which specifically pinpoints industries traditionally controlled by SOEs. The variable $Post_{p,t}$ is assigned a value of 1 for years during or after a province released its provincial provisions in response to the "36 Clauses". Control variables include logarithms of the provincial population and GDP, as well as the provincial unemployment rate. We also control for Province×Industry and Year×Industry fixed effects.

Table 4 reports the results, with Columns (1) and (2) using $MarketEntry$ and $Monopoly$, respectively, as the treatment variable. The key interaction term coefficient stands at -0.035 and -0.037, both significant at the 1% level. These results convey that, in the wake of the “36 Clauses”, the share of assets held by SOEs plummeted by roughly 3.6%. This underscores the substantial impact of the policy in diminishing SOE dominance within the relevant sectors.

We also expect other clauses to bring similar improvements in their respective dimensions. For instance, in the context of the “Arbitrary Penalty Clause”, we anticipate that provinces that have implemented this clause will show a greater reduction in revenue from fines post-policy implementation than those provinces that did not. To test this, we conduct the following city-year-level regression:

$$CityVar_{c,p,t} = \alpha + \beta_1 \times Treat_p + \beta_2 \times Post_{p,t} + \beta_3 \times Treat_p \times Post_{p,t} + X \times Control_{p,t-1} + CityFE + YearFE. \quad (3)$$

Here, $CityVar_{c,p,t}$ represents a city-level variable that measures a particular dimension. Specifically, we use *LogFine* to measure city-level fine levied by local government. We use city-level natural logarithm of value-added tax (*LogVAT*) to measure firms' tax burden. The city-level corporate financial slack (*FinancialSlack*) is measured by the average current assets of enterprises with annual sales of more than 5 million yuan. We control for population, GDP, budget revenue, and unemployment rate in the past year, as well as city fixed effects and year fixed effects.

The results reported in Table 4, Columns (3)-(5) affirm the anticipated effects: (1) firms located in provinces that implemented the "Arbitrary Penalty Clause" experienced a significantly greater decrease in fines post-policy; (2) firms in provinces that adopted "Fiscal Clause" and "Financial Clause" saw a greater increase in financial slack after the policy change; 3) firms in provinces that embraced the "Tax Clause" observed a greater reduction in the value-added tax imposed on them. Specifically, the coefficient of the $ArbitraryPenalty \times Post$ is -0.104 in Column (3), significant at the 1% level, indicating that cities in provinces that adopted the "Arbitrary Penalty Clause" experienced on average a greater reduction in fine revenue of 10.4% subsequent to implementation of the "36 Clauses."

D. Extensive versus Intensive Margins

We also analyzed how the "36 Clauses" combined with infrastructure investment affect new firm entries and the productivity of existing firms, breaking down the effects on both the extensive (entry) and intensive (productivity) margins.

Specifically, we carried out regressions at the province-industry-year (and city-industry-year) level, analyzing the annual growth in firm numbers within each province-industry (city-industry) group, as per specification (1). The findings, presented in Table A5, show a marked increase in new firm entries following infrastructure investment enhancements. This effect is further magnified by the deregulation of market entry and reductions in penalties. For instance, in Column (1), the coefficient of $LogInfra$ is 12.726, significant at the 10% level, indicating that a 100% increase in infrastructure investment leads to an increase of 12.726 new entries per province-industry group. More notably, the coefficient of the triple interaction term is 10.665, significant at the 1% level, highlighting that the impact of infrastructure investment on new firm entries (the

extensive margin) grows by an average of 83.8% (10.665/12.726) under improved market conditions.

Moreover, we assess the effects on existing firms (intensive margin). We apply the same regression analyses in Tables 2 and 3 to a sub-sample of firms that existed at least one year before and after the 2005 policy change. Tables A6 and A7 report the results. The findings, detailed in Tables A6 and A7, align with those in Tables 2 and 3, showing that infrastructure investments improve firm productivity and performance. This positive impact is significantly amplified following the implementation of the "36 Clauses." In essence, the synergy between infrastructure investments and business environment improvements, as demonstrated in Tables 2 and 3, is evident in both the entry of new firms and the enhanced performance of existing ones.

V. Conclusion

Our study on China's landmark policy of "36 Clauses" underscores the critical role of a supportive market environment in leveraging infrastructure investments to boost firm productivity. This finding underscores the necessity of combining state interventions with market liberalization for balanced development, especially pertinent given China's recent shift towards more assertive state interventions from a market-driven approach. This insight is also applicable to other emerging economies at similar developmental stages, such as India, highlighting the importance of aligning state infrastructure initiatives with policies that enhance market competition and encourage private sector expansion.

References

Acemoglu, Daron and James A Robinson. 2012. "Why Nations Fail: The Origins of Power, Prosperity, and Poverty." *Finance and Development-English Edition*, 49(1), 53.

Adelino, Manuel, Igor Cunha and Miguel A Ferreira. 2017. "The Economic Effects of Public Financing: Evidence from Municipal Bond Ratings Recalibration." *The Review of Financial Studies*, 30(9), 3223-68.

Allen, Franklin, Jun Qian, and Meijun Qian. 2005 "Law, finance, and economic growth in China." Journal of financial economics 77.1: 57-116.

Andreoni, James and A Abigail Payne. 2003. "Do Government Grants to Private Charities Crowd out Giving or Fund-Raising?" *American Economic Review*, 93(3), 792-812.

Aschauer, David Alan. 1989. "Is Public Expenditure Productive?" *Journal of Monetary Economics*, 23(2), 177-200.

Auerbach, Alan J and Yuriy Gorodnichenko. 2012. "Measuring the Output Responses to Fiscal Policy." *American Economic Journal: Economic Policy*, 4(2), 1-27.

Auerbach, Alan; Yuriy Gorodnichenko and Daniel Murphy. 2020. "Local Fiscal Multipliers and Fiscal Spillovers in the USA." *IMF Economic Review*, 68, 195-229.

Bahmani-Oskooee, Mohsen. 1999. "Do Federal Budget Deficits Crowd out or Crowd in Private Investment?" *Journal of Policy Modeling*, 21(5), 633-40.

Banerjee, Abhijit; Esther Duflo and Nancy Qian. 2020. "On the Road: Access to Transportation Infrastructure and Economic Growth in China." *Journal of Development Economics*, 145, 102442.

Barro, Robert J. 1990. "Government Spending in a Simple Model of Endogenous Growth." *Journal of political economy*, 98(5, Part 2), S103-S25.

Berkowitz, Daniel; Chen Lin and Yue Ma. 2015. "Do Property Rights Matter? Evidence from a Property Law Enactment." *Journal of financial Economics*, 116(3), 583-93.

Brockman, Paul; Michael Firth; Xianjie He; Xinyang Mao and Oliver Rui. 2019. "Relationship-Based Resource Allocations: Evidence from the Use of "Guanxi" During Seos." *Journal of Financial and Quantitative Analysis*, 54(3), 1193-230.

Burnside, Craig; Martin Eichenbaum and Jonas DM Fisher. 2004. "Fiscal Shocks and Their Consequences." *Journal of Economic theory*, 115(1), 89-117.

Calderón, César and Alberto Chong. 2004. "Volume and Quality of Infrastructure and the Distribution of Income: An Empirical Investigation." *Review of Income and Wealth*, 50(1), 87-106.

Calderón, César and Luis Servén. 2010. "Infrastructure and Economic Development in Sub-Saharan Africa." *Journal of African Economies*, 19(suppl_1), i13-i87.

Cohen, Lauren; Joshua Coval and Christopher Malloy. 2011. "Do Powerful Politicians Cause Corporate Downsizing?" *Journal of political economy*, 119(6), 1015-60.

Cohen, Jeffrey P and Catherine J Morrison Paul. 2004. "Public Infrastructure Investment, Interstate Spatial Spillovers, and Manufacturing Costs." *Review of Economics and Statistics*, 86(2), 551-60.

Cong, Lin William; Haoyu Gao; Jacopo Ponticelli and Xiaoguang Yang. 2019. "Credit Allocation under Economic Stimulus: Evidence from China." *The Review of Financial Studies*, 32(9), 3412-60.

Cutler, David M and Jonathan Gruber. 1996. "Does Public Insurance Crowd out Private Insurance?" *The Quarterly Journal of Economics*, 111(2), 391-430.

Démurger, Sylvie. 2001. "Infrastructure Development and Economic Growth: An Explanation for Regional Disparities in China?" *Journal of Comparative economics*, 29(1), 95-117.

Deng, Xin and Russell Smyth. 2000. "Non-Tax Levies in China: Sources, Problems and Suggestions for Reform." *Development Policy Review*, 18(4), 391-411.

Dollar, David and Aart Kraay. 2003. "Institutions, Trade, and Growth." *Journal of monetary economics*, 50(1), 133-62.

Erenburg, Sharon J. 1993. "The Real Effects of Public Investment on Private Investment." *Applied Economics*, 25(6), 831-37.

Gale, William G. 1991. "Economic Effects of Federal Credit Programs." *The American Economic Review*, 133-52.

Gang, Fan; Wang Xiaolu and Ma Guangrong. 2012. "The Contribution of Marketization to China's Economic Growth." *China Economist*, 7(2), 4.

Hooper, Emma; Sanjay Peters and Patrick Pintus. 2017. "To What Extent Can Long-Term Investment in Infrastructure Reduce Inequality?".

Hsieh, Chang-Tai and Peter J Klenow. 2009. "Misallocation and Manufacturing Tfp in China and India." *The Quarterly Journal of Economics*, 124(4), 1403-48.

Huang, Yi; Marco Pagano and Ugo Panizza. 2020. "Local Crowding-out in China." *The Journal of Finance*, 75(6), 2855-98.

Jiang, Guohua; Charles MC Lee and Heng Yue. 2010. "Tunneling through Intercorporate Loans: The China Experience." *Journal of financial Economics*, 98(1), 1-20.

Jorgenson, Dale and Kevin Stiroh. 2000. "Raising the Speed Limit: Us Economic Growth in the Information Age. Brookings Papers on Economic Activity N 1," Washington, DC: Brookings Institution.

Juhász, Réka; Nathan J Lane and Dani Rodrik. 2023. "The New Economics of Industrial Policy," National Bureau of Economic Research.

Kodongo, Odongo and Kalu Ojah. 2016. "Does Infrastructure Really Explain Economic Growth in Sub-Saharan Africa?" *Review of Development Finance*, 6(2), 105-25.

Lin, Justin Yifu. 2011. *Demystifying the Chinese Economy*. Cambridge university press.

Liu, Qigui; Xiaofei Pan and Gary Gang Tian. 2018. "To What Extent Did the Economic Stimulus Package Influence Bank Lending and Corporate Investment Decisions? Evidence from China." *Journal of Banking & Finance*, 86, 177-93.

Lynde, Catherine and James Richmond. 1992. "The Role of Public Capital in Production." *The review of economics and statistics*, 37-44.

Mitra, Pritha. 2006. "Has Government Investment Crowded out Private Investment in India?" *American Economic Review*, 96(2), 337-41.

Miyamoto, Wataru; Thuy Lan Nguyen and Dmitriy Sergeyev. 2018. "Government Spending Multipliers under the Zero Lower Bound: Evidence from Japan." *American Economic Journal: Macroeconomics*, 10(3), 247-77.

Munnell, Alicia H. 1992. "Policy Watch: Infrastructure Investment and Economic Growth." *Journal of economic perspectives*, 6(4), 189-98.

Nakamura, Emi and Jón Steinsson. 2014. "Fiscal Stimulus in a Monetary Union: Evidence from Us Regions." *American Economic Review*, 104(3), 753-92.

Nazmi, Nader and Miguel D Ramirez. 1997. "Public and Private Investment and Economic Growth in Mexico." *Contemporary Economic Policy*, 15(1), 65-75.

Ngo, Phong TH and Jared Stanfield. 2022. "Does Government Spending Crowd out R&D Investment? Evidence from Government-Dependent Firms and Their Peers." *Journal of Financial and Quantitative Analysis*, 57(3), 888-922.

North, Douglass C. 1991. *Institutions, Institutional Change and Economic Performance*. Cambridge University Press.

Ramey, Valerie A and Matthew D Shapiro. 1998. "Costly Capital Reallocation and the Effects of Government Spending," *Carnegie-Rochester conference series on public policy.* Elsevier, 145-94.

Ramirez, Miguel D and Nader Nazmi. 2003. "Public Investment and Economic Growth in Latin America: An Empirical Test." *Review of Development Economics*, 7(1), 115-26.

Rodrik, Dani. 1999. "Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses." *Journal of economic growth*, 4, 385-412.

Ru, Hong. 2018. "Government Credit, a Double-Edged Sword: Evidence from the China Development Bank." *The Journal of Finance*, 73(1), 275-316.

Sahoo, Pravakar and Ranjan Kumar Dash. 2012. "Economic Growth in South Asia: Role of Infrastructure." *The Journal of International Trade & Economic Development*, 21(2), 217-52.

Sanchez-Robles, Blanca. 1998. "Infrastructure Investment and Growth: Some Empirical Evidence." *Contemporary Economic Policy*, 16(1), 98-108.

Song, Zheng; Kjetil Storesletten and Fabrizio Zilibotti. 2011. "Growing Like China." *American Economic Review*, 101(1), 196-233.

Song, Zheng and Wei Xiong. 2018. "Risks in China's Financial System." *Annual Review of Financial Economics*, 10, 261-86.

Song, Zheng and Wei Xiong. 2023.. "The Mandarin Model of Growth." National Bureau of Economic Research.

Stiglitz, Joseph E. 1993. "The Role of the State in Financial Markets." *The World Bank Economic Review*, 7(suppl_1), 19-52.

Stiroh, Kevin J. 2001. "What Drives Productivity Growth?" *Economic Policy Review*, 7(1).

Schwarz, Anita M. 1992. "How Effective Are Directed Credit Policies in the United States?: A Literature Survey."

Traum, Nora and Shu-Chun S Yang. 2015. "When Does Government Debt Crowd out Investment?" *Journal of Applied Econometrics*, 30(1), 24-45.

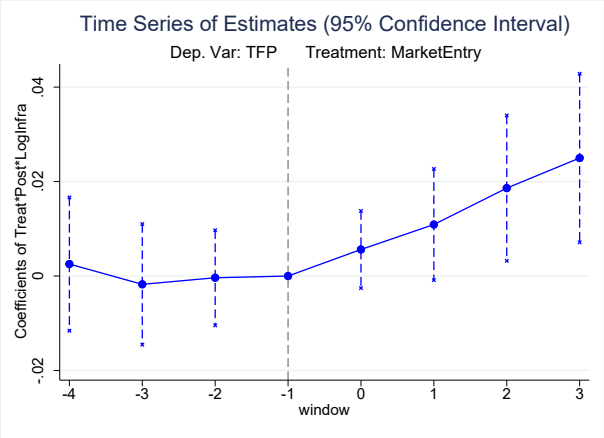
Oliver E Williamson. 1985. "The Economic Institutions of Capitalism." Free Press.

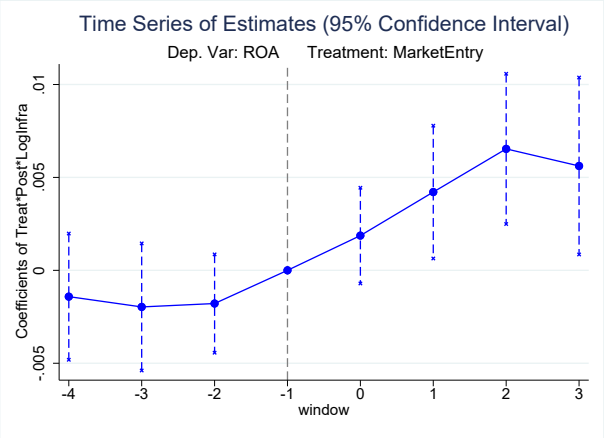
Figure 1 Time Series of Main Effect

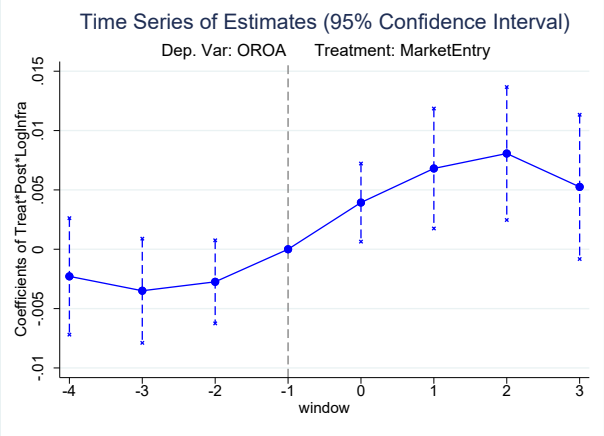
This figure plots the dynamics of the coefficients and the 95% confidence interval of the triple interactions (ψ_i) in the following regression:

$$Y_{i,j,c,p,t} = \alpha + \beta_1 \times Treat_{j,p} + \sum_{i=-4,i\neq-1}^{3} \gamma_i \times window_i + \sum_{i=-4,i\neq-1}^{3} \eta_i \times window_i \times LogInfra_{c,t} + \sum_{i=-4,i\neq-1}^{3} \phi_i \times window_i \times Treat_{j,p} + \sum_{i=-4,i\neq-1}^{3} \psi_i \times window_i \times Treat_{j,p} \times LogInfra_{c,t} + X \times Control + FEs + \epsilon_{it},$$

where $window_i$ equals 1 if the current year minus the provincial shock year equals *i*. The sample excludes observations that are 4 years before and 3 years after the year when provincial shock take place. We exclude $window_{-1}$ in the regression as the benchmark. The treatment is *MarketEntry*. Dependent variables are *TFP*, *ROA*, *OROA*, *LogSales* respectively. Control variables include macro-level controls, such as *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such as *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect, and province×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1.







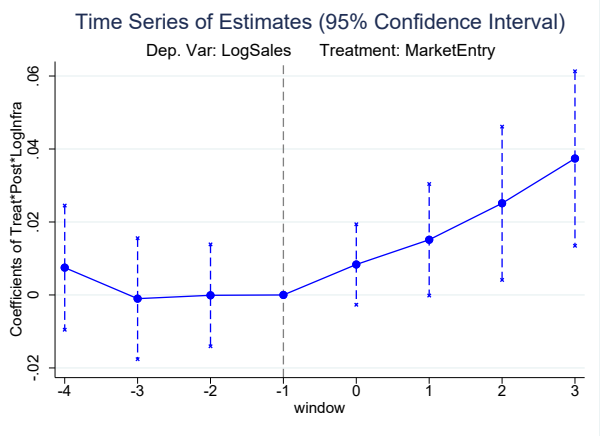


Table 1: Summary Statistics

This table reports the summary statistics. Panel A presents summary statistics of macro-level variables at the city×year level. The data cover 339 prefecture-level cities from 2000 to 2009. Panel B provides summary statistics at the firm×year level for our main CIC sample from 2000 to 2009. All variables are winsorized at 1% and 99%.

Panel A Macro-level Data					
Variable	N	Mean	SD	Min	Max
Population	3108	3.874766	2.448478	0.240279	11.1228
GDP	3276	60018.86	83890.8	1266	515422.8
Revenue	3303	3645.268	7055.476	56.7	49796
Unemployment	3271	3.761999	0.641641	2.5	6.5
Fine	1804	203.4809	241.0596	7.28	1339.03
Infra	2929	1515.642	3411.112	11.19	21640.27
Panel B Firm Characteristics					
Variables	N	Mean	SD	Min	Max
TFP	2217154	3.094545	0.7918586	1.003297	5.109544
Assets	2217160	49506.24	118112.8	1233	862795
LogAssets	2217158	9.71589	1.33928	7.117206	13.66793
Workers	2217160	190.5898	297.4992	10	2010
ROA	2216379	0.0841312	0.1622271	-0.2000491	0.8604706
OROA	2217059	0.1069304	0.1981175	-0.2046263	0.9995809
Sales	2217160	62778.25	133820	2819	971827
LogSales	2217156	10.13533	1.212421	7.944492	13.78693
LogSalesPer	2217156	5.510114	1.028182	3.056529	8.172986
Tangibility	2217154	0.3528729	0.222983	0.0063726	0.9064134
Leverage	2217160	0.5517336	0.2767612	0.0097804	1.243315

Table 2: DDD Regressions using "36 Clauses" (*MarketEntry* and *ArbitraryPenalty*)

This table presents the results of our main DID regressions, where the treatments are *MarketEntry* and *ArbitraryPenalty*. The sample covers all non-SOE manufacturing firms with non-missing variables from 2000 to 2009, excluding the utility industries (electricity, gas, and water industry). In Columns (1)-(5), treatment is *MarketEntry*, a dummy variable that equals 1 for treated province-industry categories that are either traditionally monopolized industries or have SOE-asset-to-total-asset ratio exceeding 50% in 2004. In Columns (6)-(10), treatment is *ArbitraryPenalty*, which equals 1 if the province responds to the "Arbitrary Penalty Clause" with a detailed implementation strategy relevant to arbitrary fines. The dependent variables are firm-level characteristics such as *TFP*, *ROA*, *OROA*, etc. *Pre1* (*Pre2*) is a dummy variable that indicates one (two) year(s) before the year when the local government releases their own provincial provisions in response to "36 Clauses". *Post* is a dummy variable that equals 1 for years during or after the year when the local government releases its own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the city-year level. Control variables include macro-level controls, such as *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such as *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect, and industry×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = MarketEntry					*Treatment = ArbitraryPenalty*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*
Post	0.216***	0.067***	0.086***	0.342***	0.336***	0.385***	0.127***	0.135***	0.576***	0.644***
	(3.72)	(3.54)	(3.81)	(4.94)	(3.62)	(4.31)	(4.66)	(4.18)	(6.72)	(6.19)
LogInfra	0.040**	0.009***	0.012***	0.052***	0.051**	0.047***	0.011**	0.016***	0.063***	0.076***
	(2.53)	(3.32)	(3.44)	(2.85)	(2.59)	(2.82)	(2.50)	(3.02)	(3.14)	(4.71)
*Treatment*Post*LogInfra*	0.017***	0.006***	0.009***	0.020**	0.014*	0.046***	0.014***	0.014***	0.060***	0.066***
	(2.61)	(4.40)	(5.00)	(2.46)	(1.88)	(2.85)	(4.00)	(3.13)	(3.42)	(3.81)
*Post*LogInfra*	-0.034***	-0.011***	-0.015***	-0.048***	-0.046***	-0.056***	-0.019***	-0.022***	-0.078***	-0.083***
	(-5.60)	(-6.49)	(-7.20)	(-6.67)	(-4.47)	(-5.28)	(-6.66)	(-6.46)	(-7.69)	(-7.45)
*Treatment*LogInfra*	-0.018	-0.004*	-0.007**	-0.023*	-0.013	-0.023	-0.006	-0.009	-0.034	-0.045
	(-1.58)	(-1.94)	(-1.98)	(-1.89)	(-1.06)	(-0.85)	(-1.16)	(-1.41)	(-1.09)	(-1.56)
*Treatment*Post*	-0.074	-0.044***	-0.067***	-0.119*	-0.044	-0.336***	-0.110***	-0.099***	-0.466***	-0.546***
	(-1.45)	(-3.62)	(-4.25)	(-1.88)	(-0.67)	(-2.67)	(-3.63)	(-2.62)	(-3.60)	(-4.00)
*Treatment*Pre1*	0.009	-0.004	-0.005	0.003	0.023	-0.021	-0.000	0.003	-0.037	-0.027
	(0.48)	(-0.68)	(-0.72)	(0.15)	(1.06)	(-0.57)	(-0.01)	(0.27)	(-0.91)	(-0.69)
*Treatment*Pre2*	-0.018	-0.005	-0.008	-0.022	-0.013	-0.010	-0.000	0.007	-0.024	-0.003
	(-1.15)	(-1.12)	(-1.37)	(-1.29)	(-0.69)	(-0.47)	(-0.06)	(0.95)	(-1.03)	(-0.12)
LogPopulation	-0.048	0.006	0.004	-0.191**	-0.124	-0.048	0.003	-0.000	-0.178**	-0.114
	(-0.88)	(0.88)	(0.54)	(-2.19)	(-1.59)	(-0.96)	(0.38)	(-0.00)	(-2.20)	(-1.65)
LogGDP	0.115	-0.001	-0.004	0.149	0.086	0.097	0.001	-0.004	0.139	0.070
	(1.37)	(-0.10)	(-0.37)	(1.17)	(0.72)	(1.20)	(0.05)	(-0.34)	(1.13)	(0.65)
LogRevenue	-0.073	-0.003	-0.003	0.022	0.006	-0.061	-0.003	-0.001	0.021	0.004
	(-1.58)	(-0.34)	(-0.32)	(0.34)	(0.10)	(-1.31)	(-0.29)	(-0.11)	(0.33)	(0.07)
Unemployment	0.026	0.002	0.003	0.028	0.037	0.014	0.001	0.002	0.009	0.038
	(0.96)	(0.32)	(0.46)	(0.83)	(1.55)	(0.48)	(0.12)	(0.21)	(0.24)	(1.48)
LogAssets	0.018***	-0.003**	-0.003**	0.298***	0.080***	0.016***	-0.003***	-0.004**	0.296***	0.078***
	(3.35)	(-2.33)	(-2.22)	(25.43)	(14.78)	(3.07)	(-2.68)	(-2.47)	(24.25)	(13.96)
Tangibility	-0.018	0.006**	0.005*	0.051***	-0.018	-0.018	0.006**	0.005*	0.049***	-0.020*
	(-1.45)	(2.49)	(1.82)	(3.58)	(-1.50)	(-1.41)	(2.28)	(1.68)	(3.41)	(-1.66)
Leverage	-0.023**	-0.007***	-0.012***	-0.017*	-0.006	-0.028***	-0.007***	-0.013***	-0.022**	-0.009
	(-2.42)	(-2.80)	(-4.59)	(-1.76)	(-0.59)	(-2.84)	(-2.90)	(-4.66)	(-2.27)	(-0.94)
Pre1	0.001	-0.014*	-0.022**	0.020	0.017	0.003	-0.017*	-0.026**	0.025	0.012
	(0.02)	(-1.80)	(-2.28)	(0.76)	(0.60)	(0.12)	(-1.94)	(-2.40)	(0.84)	(0.36)
Pre2	0.019	-0.004	-0.008	0.032*	0.035*	0.017	-0.005	-0.012	0.034*	0.026
	(1.21)	(-0.70)	(-1.19)	(1.85)	(1.74)	(1.03)	(-0.87)	(-1.53)	(1.86)	(1.13)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,539,327	1,538,934	1,539,284	1,539,328	1,539,328	1,460,416	1,460,023	1,460,373	1,460,417	1,460,417
R-squared	0.777	0.671	0.672	0.872	0.826	0.780	0.678	0.678	0.873	0.827

Table 3: DDD Regressions using "36 Clauses" (*Financing* and *Tax*)

This table presents the results of our main DID regressions, where the treatment is *Financing* and *Tax*, respectively. The sample covers all non-SOE manufacturing firms with non-missing variables from 2000 to 2009, excluding the utility industries (electricity, gas, and water industry). In Columns (1)-(5), treatment is *Financing*, which equals 1 if the province responds to the "Fiscal Clause" and "Financial Clause" by proposing a detailed number of special funds/subsidies or establishing detailed strategies to ease the external financial constraints for the private firm. In Columns (6)-(10), treatment is *Tax*, which equals 1 if the province responds to the "Tax Clause" by establishing detailed implementing strategies.. The dependent variables are firm-level characteristics such as *TFP*, *ROA*, *OROA*, etc. *Pre1* (*Pre2*) is a dummy variable that indicates one (two) year(s) before the year when the local government releases their own provincial provisions in response to "36 Clauses". *Post* is a dummy variable that equals 1 for years during or after the year when the local government releases its own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the city-year level. Control variables include macro-level controls, such as *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such as *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect, and industry×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = Financing					*Treatment = Tax*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*
Post	0.327***	0.081***	0.095***	0.487***	0.547***	0.438***	0.122***	0.146***	0.556***	0.638***
	(5.03)	(3.53)	(3.33)	(6.92)	(5.47)	(5.17)	(4.25)	(4.07)	(5.41)	(5.22)
LogInfra	0.050***	0.008***	0.012**	0.064***	0.079***	0.042***	0.009***	0.013**	0.063***	0.065***
	(3.60)	(2.62)	(2.26)	(3.63)	(5.83)	(3.06)	(2.96)	(2.22)	(3.62)	(4.48)
*Treatment*Post*LogInfra*	0.036***	0.006*	0.006	0.044***	0.054***	0.029**	0.007**	0.007	0.033**	0.049***
	(2.64)	(1.84)	(1.50)	(2.73)	(3.05)	(2.19)	(2.07)	(1.59)	(2.17)	(2.70)
*Post*LogInfra*	-0.047***	-0.013***	-0.017***	-0.064***	-0.069***	-0.051***	-0.016***	-0.019***	-0.066***	-0.073***
	(-6.78)	(-5.98)	(-6.10)	(-8.96)	(-6.37)	(-6.27)	(-5.19)	(-5.17)	(-6.74)	(-5.27)
*Treatment*LogInfra*	-0.024	-0.001	-0.003	-0.031	-0.049*	-0.005	-0.002	-0.003	-0.022	-0.025
	(-0.94)	(-0.25)	(-0.43)	(-1.03)	(-1.75)	(-0.24)	(-0.49)	(-0.42)	(-0.86)	(-1.01)
*Treatment*Post*	-0.265**	-0.038	-0.036	-0.359***	-0.473***	-0.352***	-0.088***	-0.096***	-0.366***	-0.512***
	(-2.51)	(-1.49)	(-1.04)	(-3.02)	(-3.52)	(-3.33)	(-3.16)	(-2.60)	(-2.94)	(-3.81)
*Treatment*Pre1*	-0.009	-0.001	0.003	-0.049	-0.046	-0.015	-0.004	-0.008	0.016	0.005
	(-0.28)	(-0.14)	(0.32)	(-1.43)	(-1.31)	(-0.50)	(-0.59)	(-0.95)	(0.45)	(0.14)
*Treatment*Pre2*	-0.015	0.000	0.008	-0.042*	-0.038	-0.002	0.002	0.002	0.020	0.021
	(-0.70)	(0.06)	(1.11)	(-1.80)	(-1.43)	(-0.11)	(0.55)	(0.38)	(0.89)	(0.83)
LogPopulation	-0.045	0.004	0.001	-0.176**	-0.115*	-0.037	0.005	0.003	-0.166**	-0.106
	(-0.94)	(0.50)	(0.12)	(-2.25)	(-1.78)	(-0.75)	(0.80)	(0.45)	(-2.05)	(-1.53)
LogGDP	0.081	-0.005	-0.008	0.120	0.054	0.107	0.002	0.000	0.143	0.068
	(1.09)	(-0.51)	(-0.78)	(1.03)	(0.53)	(1.43)	(0.25)	(0.03)	(1.22)	(0.66)
LogRevenue	-0.050	0.001	0.002	0.036	0.016	-0.068	-0.004	-0.005	0.020	0.012
	(-1.11)	(0.15)	(0.20)	(0.57)	(0.29)	(-1.57)	(-0.48)	(-0.52)	(0.32)	(0.21)
Unemployment	0.032	0.003	0.005	0.028	0.046*	0.003	-0.004	-0.005	-0.003	0.016
	(1.17)	(0.53)	(0.68)	(0.82)	(1.78)	(0.11)	(-0.80)	(-0.74)	(-0.08)	(0.71)
LogAssets	0.016***	-0.003**	-0.003**	0.295***	0.077***	0.016***	-0.003***	-0.004**	0.296***	0.078***
	(3.15)	(-2.47)	(-2.32)	(23.93)	(13.56)	(3.07)	(-2.65)	(-2.50)	(23.70)	(14.04)
Tangibility	-0.018	0.006**	0.005*	0.049***	-0.020*	-0.020	0.006**	0.004	0.047***	-0.022*
	(-1.45)	(2.25)	(1.66)	(3.41)	(-1.69)	(-1.57)	(2.13)	(1.49)	(3.30)	(-1.89)
Leverage	-0.027***	-0.007***	-0.013***	-0.021**	-0.009	-0.026***	-0.007***	-0.012***	-0.020**	-0.008
	(-2.74)	(-2.88)	(-4.59)	(-2.18)	(-0.94)	(-2.67)	(-2.80)	(-4.53)	(-2.12)	(-0.79)
Pre1	0.004	-0.014	-0.024**	0.033	0.022	0.025	-0.008	-0.013	0.021	0.027
	(0.17)	(-1.63)	(-2.22)	(1.16)	(0.68)	(0.79)	(-1.01)	(-1.13)	(0.60)	(0.73)
Pre2	0.022	-0.004	-0.011	0.041**	0.039*	0.026	-0.004	-0.008	0.023	0.024
	(1.31)	(-0.69)	(-1.40)	(2.22)	(1.67)	(1.48)	(-0.85)	(-1.26)	(1.12)	(1.16)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,460,416	1,460,023	1,460,373	1,460,417	1,460,417	1,460,416	1,460,023	1,460,373	1,460,417	1,460,417
R-squared	0.780	0.677	0.678	0.873	0.827	0.780	0.678	0.679	0.873	0.827

Table 4: Channels of Improved Marketization from "36 Clauses"

This table reports the results of our specifications (2) and (3). The sample period is from 2000 to 2009. For dependent variables, *SOERatio* is defined as the SOE-asset-to-total-asset ratio in a given province-industry category. *LogFine* is the natural logarithm of the city-level fine revenue. *FinancialSlack* is the city-level average current asset of enterprises with annual sales more than 5 million yuan. *LogVAT* is the city-level logarithm of value-added tax levied upon enterprises with annual sales more than 5 million yuan. *MarketEntry* is a dummy variable that equals 1 for treated province-industry categories that are either traditionally monopolized industries or have SOE-asset-to-total-asset ratio exceeding 50% in 2004. *Monopoly* is a dummy variable that equals 1 for traditionally monopolized industries. *ArbitraryPenalty* equals 1 if the province specifically responds to the "Arbitrary Penalty Clause" with detailed implementation strategy relevant to arbitrary fines. *Financing* equals 1 if the province responds to the "Fiscal Clause" and "Financial Clause" by proposing a detailed amount of special funds/subsidies or establishing detailed strategies to ease the external financial constraints for the private firm. The regression in Columns (1) and (2) are at the province×industry×year level, and both province×industry fixed effect and year fixed effect are added. The regressions in the rest columns are at the city×year level, both city fixed effect and year fixed effect are added. Control variables include *LogGDP*, *LogRevenue*, *LogPopulation*, and *Unemployment* in the past year. In Columns (1) and (2), control variables are measured at the province level. In Column (3), they are measured at the city level. Their definitions can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)
Dep.Var	*SOERatio*	*SOERatio*	*LogFine*	*FinancialSlack*	*LogVAT*
*MarketEntry*Post*	-0.035***				
	(-3.90)				
*Monopoly*Post*		-0.037***			
		(-3.66)			
*ArbitraryPenalty*Post*			-0.104***		
			(-3.05)		
*Financing*Post*				2.632*	
				(1.91)	
*Tax*Post*					-0.151***
					(-6.18)
Post	0.017**	0.014*	0.005	1.568	0.057**
	(2.29)	(1.76)	(0.14)	(1.27)	(2.44)
Controls	YES	YES	YES	YES	
Province*Industry FE	YES	YES			
City FE			YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Observations	9,982	10,098	1,653	2,364	2,641
R-squared	0.728	0.728	0.935	0.847	0.959

Internet Appendix

Table A1: Variable Definitions

Variables	Definition	Unit	Data Source
Population	Annual resident population at the city level.	1 million	CSMAR
LogPopulation	Natural logarithm of *Population*.		CSMAR
GDP	Annual regional gross domestic product (GDP) at the city level. The unit is in 1 million yuan.	1 million yuan	CSMAR
LogGDP	Natural logarithm of *GDP*.		CSMAR
Revenue	Annual regional budget revenue at the city level. The unit is 1 million yuan.	1 million yuan	CSMAR
LogRevenue	Natural logarithm of *Revenue*.		
Unemployment	Annual unemployment rate (total number of the unemployed divided by the total labor force in the province) at the province level.		CSMAR
Fine	Annual fine revenue (fine or confiscation revenue reported by municipal Finance Bureau as part of the non-tax revenue) at the city level. The unit is in 1 million yuan.	1 million yuan	Provincial China Statistical Yearbooks and city-level China Statistical Yearbooks
LogFine	Natural logarithm of *Fine*.		Same as *Fine*
Infra	Annual infrastructure investment (infrastructure include water, gas, central heat, road and bridge, public transportation, landscaping, environmental sanitation, and waste recycled and reused) at the city level. The unit is in 1 million yuan.	1 million yuan	China Urban Construction Statistical Yearbooks
LogInfra	Natural logarithm of *Infra*.		Same as *Infra*
TFP	(Natural logarithm of) Total factor productivity of the firm. It is calculated as the residual of the regression of log(output) on log(capital) and log(labor). We use total sales, total assets and total workers to measure firm's output, capital and labor, respectively.		CIC
Assets	Firm's annual total assets, measured at the year end.	1 thousand yuan	CIC
LogAssets	Natural logarithm of *Assets*.		CIC
ROA	Return on assets. It is calculated as the ratio of firm's net income over its total assets in the same year.		CIC
OROA	Operating return on assets. It is calculated as the ratio of firm's operating income over its total assets in the same year.		CIC
Sales	Firm's annual total sales, measured at the year end.	1 thousand yuan	CIC
LogSales	Natural logarithm of *Sales*.		CIC
LogSalesPer	Natural logarithm of firm's total sales per employee.		CIC
Tangibility	The ratio of firm's fixed assets over its total assets in the same year.		CIC
Leverage	Firm's total debt divided by its total assets in the same year.		CIC

Table A2: Provincial Response to "36 Clauses"

This table presents provincial responses to "36 Clauses for all 31 provinces.[1] *Province* denotes province names. *Y/M* denotes the specific year and month when province responded to the "36 Clauses". *The decree* refers to the specific order of the provincial provisions. *ArbitraryPenalty* equals 1 (Y) if the province specifically responds to the "Arbitrary Penalty Clause" with a detailed implementation strategy relevant to arbitrary fines. *Financing* equals 1(Y) if the province responds to the "Fiscal Clause" and "Financial Clause" by proposing a detailed amount of special funds/subsidies or establishing detailed strategies to ease the external financial constraints for the private firm. *Tax* equals 1 (Y) if the province responds to the "Tax Clause" by establishing detailed implementing strategies. *FirmRight*, *WorkerRight*, and *SocialProtection* equal 1 (Y) if the provincial provision includes a certain clause.

Province	*Y/M*	*Decree*	*ArbitraryPenalty*	*Financing*	*Tax*	*FirmRight*	*WorkerRight*	*SocialProtection*
Zhejiang	2006/1	No.1	N	N	Y	Y	Y	Y
Henan	2006/6	No.32	N	N	N	N	N	N
Liaoning	2006/3	No.13	Y	Y	Y	Y	Y	N
Anhui	2007/2	No.1	Y	N	N	Y	Y	N
Fujian	2005/11	.						
Beijing	2006/3	No.7	Y	N	N	Y	Y	Y
Yunnan	2006/12	No.24	Y	Y	Y	Y	Y	Y
Jiangxi	2006/5	No.10	Y	Y	Y	Y	Y	Y
Xinjiang	2011/7	No.126	N	Y	Y	N	N	N
Jiangsu	2005	No.7	N	Y	N	N	N	N
Guangxi	2009/12	No.103	N	N	Y	N	N	N
Guizhou	2006/6	No.14	Y	Y	Y	Y	Y	Y
Neimenggu	2006/4	No.31	N	N	Y	Y	Y	N
Sichuan	2005/8	No.21	Y	N	N	Y	Y	Y
Shan'xi	2005/9	No.27	Y	Y	Y	Y	Y	Y
Hebei	2005/5	No.39	Y	Y	N	Y	N	N
Ningxia	2005/10	No.43	Y	N	N	Y	Y	Y
Tianjin	2005/7	No.55	N	Y	Y	Y	Y	Y
Hubei	2005/8	No.15	Y	Y	N	Y	Y	N
Shandong	2010/8	No.76	N	N	Y	Y	N	Y
Gansu	2005/12	No.62	Y	N	Y	Y	Y	N
Qinghai	2005/8	No.47	Y	N	Y	Y	Y	Y
Jilin	2005/2	No.4	N	N	Y	Y	N	N
Chongqing	2005/9	No.85	Y	N	Y	Y	Y	N
Hunan	2005/7	No.12	Y	N	N	Y	Y	Y
Shanghai	2005/5	No.16	N	N	N	Y	Y	N
Xizang	2005/8	No.37	N	Y	Y	Y	Y	N
Guangdong	2005	No.4	Y	Y	Y	Y	Y	N
Heilongjiang	2005/10	No.20	Y	Y	Y	Y	N	N
Hainan	2005/12	No.66	N	Y	Y	N	N	N
Shanxi	2005/9	No.73	Y	N	N	Y	Y	N

[1] There are two special cases that we would like to clarify here. Firstly, although it was mentioned in other articles that the provincial response of Fujian province was released in Nov 2005, we were not able to find the detailed provincial provision. See https://xueshu.baidu.com/usercenter/paper/show?paperid=1b6e0r205j7w0vs02u2m0ga02s656640&site=xueshu_se. As a result, we exclude Fujian province in our main analysis. Our results remain robust if we include Fujian province and assign values of all indicators as "N". Secondly, Jiangsu and Guangdong had announced similar provisions prior to "36 Clauses" in 2005 with the "Market Entry Clause", as such they did not respond to the "36 Clauses" after 2005. We hypothesized that these two provinces are shocked as soon as the central government released the national "36 Clauses" in Feb 2005, under the assumption that the provincial provision were more effective after the national shock, before which provinces only implemented the provision with great scrutiny to avoid deviating from the guide of the central government. Our results remain robust if we consider the shock year for these two provinces as prior to 2005, namely 2004 and 2003, respectively.

Table A3: DDD Regressions using "36 Clauses" (Indicator: *FirmRight***)**

This table presents results of our DID regressions, where treatment is *FirmRight*. The sample covers all non-SOE manufacturing firms with non-missing variables from 2000 to 2009, excluding the utility industries (electricity, gas, and water industry). The treatment is *Tax*, which equals 1 if the province responds to the "Tax Clause" by establishing detailed implementing strategies. The dependent variables are firm-level characteristics such like *TFP*, *ROA*, *OROA*, etc. *Pre1* (*Pre2*) is a dummy variable that indicate one (two) year(s) before the year when the local government release their own provincial provisions in respond to "36 Clauses". *Post* is a dummy variable which equals 1 for years during or after the year when the local government releases their own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the city-year level. Control variables include macro-level controls, such like *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such like *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect and industry×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = FirmRight				
	(1)	(2)	(3)	(4)	(5)
Dep.Var	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*
Post	0.458***	0.180***	0.185***	0.566***	0.615***
	(3.47)	(4.59)	(4.13)	(3.94)	(4.14)
LogInfra	0.046**	0.013***	0.017***	0.067***	0.062***
	(2.49)	(2.74)	(2.77)	(3.19)	(3.08)
*Treatment*Post*LogInfra*	0.027	0.013***	0.011**	0.027	0.030
	(1.62)	(2.77)	(2.02)	(1.47)	(1.44)
*Treatment*LogInfra*	-0.056***	-0.022***	-0.024***	-0.069***	-0.070***
	(-3.65)	(-4.92)	(-4.51)	(-4.31)	(-3.96)
*Treatment*LogInfra*	-0.006	-0.006	-0.007	-0.019	-0.011
	(-0.28)	(-1.20)	(-1.02)	(-0.77)	(-0.45)
*Treatment*Post*	-0.304**	-0.143***	-0.132***	-0.294*	-0.343**
	(-2.14)	(-3.49)	(-2.78)	(-1.84)	(-2.09)
*Treatment*Pre1*	-0.009	-0.002	-0.008	0.027	0.003
	(-0.23)	(-0.33)	(-0.77)	(0.60)	(0.07)
*Treatment*Pre2*	0.009	0.004	0.005	0.033	0.032
	(0.37)	(0.76)	(0.74)	(1.17)	(1.06)
LogPopulation	-0.039	0.005	0.003	-0.166**	-0.106
	(-0.78)	(0.75)	(0.38)	(-2.05)	(-1.50)
LogGDP	0.095	-0.001	-0.004	0.128	0.049
	(1.21)	(-0.15)	(-0.42)	(1.06)	(0.46)
LogRevenue	-0.064	-0.003	-0.004	0.028	0.020
	(-1.39)	(-0.37)	(-0.38)	(0.44)	(0.34)
Unemployment	0.026	0.001	0.004	0.024	0.045*
	(0.93)	(0.23)	(0.51)	(0.66)	(1.76)
LogAssets	0.016***	-0.003***	-0.004**	0.296***	0.078***
	(3.02)	(-2.70)	(-2.52)	(23.83)	(14.00)
Tangibility	-0.019	0.006**	0.004	0.048***	-0.021*
	(-1.44)	(2.11)	(1.54)	(3.26)	(-1.72)
Leverage	-0.026***	-0.007***	-0.012***	-0.020**	-0.008
	(-2.70)	(-2.73)	(-4.54)	(-2.12)	(-0.81)
Pre1	0.007	-0.013	-0.016	-0.004	0.013
	(0.19)	(-1.37)	(-1.33)	(-0.08)	(0.30)
Pre2	0.009	-0.008	-0.014*	0.001	0.005
	(0.39)	(-1.45)	(-1.90)	(0.05)	(0.18)
Firm FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Province*Industry FE	YES	YES	YES	YES	YES
Year*Industry FE	YES	YES	YES	YES	YES
Observations	1,460,416	1,460,023	1,460,373	1,460,417	1,460,417
R-squared	0.780	0.678	0.679	0.873	0.827

Table A4: DDD Regressions using "36 Clauses" (*WorkerRight* and *SocialProtection*)

This table presents the results of our main DID regressions, where the treatments are *WorkerRight* and *SocialProtection*, respectively. The sample covers all non-SOE manufacturing firms with non-missing variables from 2000 to 2009, excluding the utility industries (electricity, gas, and water industry). In Columns (1)-(5), treatment is *WorkerRight*, which equals 1 if the province responds to the "Worker Right Clause". In Columns (6)-(10), treatment is *SocialProtection*, which equals 1 if the province responds to the "Social Protection Clause". The dependent variables are firm-level characteristics such as *TFP*, *ROA*, *OROA*, etc. *Pre1* (*Pre2*) is a dummy variable that indicates one (two) year(s) before the year when the local government releases their own provincial provisions in response to "36 Clauses". *Post* is a dummy variable that equals 1 for years during or after the year when the local government releases its own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the city-year level. Control variables include macro-level controls, such as *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such as *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect, and industry×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = WorkerRight					*Treatment = SocialProtection*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*
Post	0.428***	0.136***	0.140***	0.538***	0.587***	0.193**	0.084***	0.104***	0.291***	0.292**
	(3.65)	(3.81)	(3.35)	(4.03)	(4.57)	(2.15)	(3.34)	(3.39)	(2.78)	(2.36)
LogInfra	0.040***	0.008**	0.012**	0.057***	0.063***	0.026	0.008**	0.009**	0.034	0.040*
	(3.30)	(2.10)	(2.42)	(3.68)	(4.26)	(1.34)	(2.28)	(2.22)	(1.52)	(1.66)
*Treatment*Post*LogInfra*	0.024	0.008	0.006	0.022	0.028	-0.029**	0.004	0.001	-0.034**	-0.023
	(1.38)	(1.57)	(0.97)	(1.06)	(1.33)	(-1.97)	(1.07)	(0.33)	(-2.05)	(-1.23)
*Post*LogInfra*	-0.050***	-0.017***	-0.018***	-0.061***	-0.065***	-0.024**	-0.012***	-0.015***	-0.036***	-0.039**
	(-3.21)	(-3.70)	(-3.38)	(-3.41)	(-3.77)	(-2.28)	(-4.10)	(-4.09)	(-2.92)	(-2.50)
*Treatment*LogInfra*	-0.003	-0.000	-0.001	-0.013	-0.018	0.051**	0.002	0.007	0.064**	0.056**
	(-0.16)	(-0.10)	(-0.20)	(-0.53)	(-0.75)	(2.37)	(0.41)	(1.04)	(2.53)	(2.26)
*Treatment*Post*	-0.353***	-0.104***	-0.094**	-0.350**	-0.406***	0.156	-0.053**	-0.050	0.219*	0.190
	(-2.69)	(-2.81)	(-2.15)	(-2.29)	(-2.62)	(1.36)	(-2.14)	(-1.39)	(1.75)	(1.38)
*Treatment*Pre1*	-0.132***	-0.019**	-0.025**	-0.139***	-0.141***	-0.014	-0.003	-0.016*	0.009	0.030
	(-3.81)	(-2.27)	(-2.49)	(-3.44)	(-3.57)	(-0.53)	(-0.54)	(-1.92)	(0.29)	(0.90)
*Treatment*Pre2*	-0.059***	-0.005	-0.001	-0.068***	-0.054**	-0.008	-0.001	-0.010	0.015	0.022
	(-2.87)	(-0.97)	(-0.12)	(-3.00)	(-2.02)	(-0.38)	(-0.20)	(-1.47)	(0.67)	(0.77)
LogPopulation	-0.038	0.005	0.003	-0.167**	-0.105	-0.044	0.005	0.002	-0.175**	-0.114
	(-0.79)	(0.74)	(0.37)	(-2.12)	(-1.57)	(-0.93)	(0.73)	(0.25)	(-2.24)	(-1.64)
LogGDP	0.098	-0.001	-0.005	0.135	0.057	0.085	-0.006	-0.010	0.125	0.059
	(1.32)	(-0.17)	(-0.54)	(1.15)	(0.55)	(1.09)	(-0.65)	(-0.98)	(1.03)	(0.54)
LogRevenue	-0.066	-0.002	-0.002	0.021	0.013	-0.053	0.001	0.003	0.034	0.016
	(-1.49)	(-0.19)	(-0.17)	(0.34)	(0.23)	(-1.20)	(0.15)	(0.29)	(0.55)	(0.29)
Unemployment	0.013	-0.001	-0.000	0.008	0.027	0.029	0.001	0.003	0.027	0.048*
	(0.48)	(-0.27)	(-0.00)	(0.24)	(1.17)	(1.05)	(0.19)	(0.35)	(0.77)	(1.84)
LogAssets	0.017***	-0.003***	-0.004**	0.296***	0.079***	0.018***	-0.003**	-0.003**	0.297***	0.078***
	(3.16)	(-2.65)	(-2.51)	(24.05)	(14.41)	(3.32)	(-2.25)	(-2.07)	(23.86)	(14.26)
Tangibility	-0.020	0.005**	0.004	0.047***	-0.022*	-0.018	0.006**	0.005	0.049***	-0.020
	(-1.55)	(2.04)	(1.45)	(3.21)	(-1.84)	(-1.43)	(2.21)	(1.65)	(3.36)	(-1.63)
Leverage	-0.025***	-0.007***	-0.012***	-0.019**	-0.007	-0.027***	-0.007***	-0.013***	-0.021**	-0.010
	(-2.62)	(-2.69)	(-4.46)	(-2.02)	(-0.68)	(-2.82)	(-2.95)	(-4.69)	(-2.25)	(-1.04)
Pre1	0.055**	-0.006	-0.011	0.077**	0.075**	0.017	-0.011	-0.011	0.022	-0.003
	(2.05)	(-0.60)	(-0.95)	(2.43)	(2.16)	(0.62)	(-1.40)	(-1.09)	(0.70)	(-0.08)
Pre2	0.038**	-0.002	-0.009	0.057***	0.051**	0.029	-0.002	0.000	0.028	0.019
	(2.18)	(-0.35)	(-1.15)	(2.91)	(2.00)	(1.60)	(-0.54)	(0.04)	(1.34)	(0.96)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,460,416	1,460,023	1,460,373	1,460,417	1,460,417	1,460,416	1,460,023	1,460,373	1,460,417	1,460,417
R-squared	0.780	0.678	0.679	0.874	0.827	0.780	0.678	0.678	0.873	0.827

Table A5: Entry of New Firms

This table presents results of regressions on the extensive margin. The regression specification is similar to equation (1), while the dependent variables are replaced by *NewFirm*, which is defined as the annual increase in the numbers of firms in each province-industry (or city-industry) group. In Columns (1) and (3), the regressions are at the province-industry-year level, while in Columns (2) and (4), the regressions are at the city-industry-year level. In Columns (1)-(2), treatment is *MarketEntry*, which is a dummy variable which equals 1 for treated province-industry categories that are either traditionally monopolized industries or have SOE-asset-to-total-asset ratio exceeding 50% in 2004. In Columns (3)-(4), treatment is *ArbitraryPenalty*, which equals 1 if the province responds to the "Arbitrary Penalty Clause" with detailed implementation strategy relevant to arbitrary fines. *Post* is a dummy variable which equals 1 for years during or after the year when the local government releases their own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the province-year (or city-year) level. Control variables include *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*. Control variables are measured in the past year, at province level in Columns (1) and (3), and at city level in Columns (2) and (4). The regression also controls for year fixed effect, province×industry fixed effect (or city×industry fixed effect) and industry×year fixed effect. Standard errors are clustered at the province level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = MarketEntry		*Treatment = ArbitragePenalty*	
	(1)	(2)	(3)	(4)
Dep.Var	*NewFirm*	*NewFirm*	*NewFirm*	*NewFirm*
Post	109.209**	10.418***	193.828***	17.524***
	(2.29)	(3.25)	(3.52)	(3.23)
LogInfra	12.726*	1.528***	6.786	1.542***
	(1.86)	(4.15)	(0.50)	(4.97)
*Treatment*Post*LogInfra*	10.665***	1.253***	17.664**	2.049**
	(2.96)	(3.65)	(2.40)	(2.42)
*Post*LogInfra*	-12.895**	-1.628***	-21.986***	-2.671***
	(-2.67)	(-3.63)	(-4.27)	(-3.43)
*Treatment*LogInfra*	-4.097	-0.920***	0.902	-0.624
	(-0.87)	(-3.44)	(0.06)	(-1.55)
*Treatment*Post*	-96.933**	-7.649***	-158.817*	-13.185**
	(-2.63)	(-3.48)	(-1.99)	(-2.36)
*Treatment*Pre1*	2.677	0.570	12.833	1.255
	(0.16)	(0.48)	(0.49)	(0.58)
*Treatment*Pre2*	-11.213	-0.670	-13.812	-0.576
	(-1.48)	(-0.82)	(-0.83)	(-0.34)
LogPopulation_lag	-22.825**	-1.836	-24.355**	-1.676
	(-2.67)	(-1.66)	(-2.64)	(-1.31)
LogGDP_lag	33.775	0.386	65.653	-0.296
	(0.93)	(0.27)	(1.50)	(-0.23)
LogRevenue_lag	26.076**	1.291	19.699	1.635
	(2.50)	(0.95)	(1.52)	(1.32)
Unemployment_lag	8.668**	0.502	5.245	0.143
	(2.45)	(1.44)	(0.85)	(0.23)
Pre_1	-17.033	-1.438	-23.384	-2.034
	(-0.73)	(-0.73)	(-0.87)	(-1.05)
Pre_2	8.370	0.682	13.224	0.900
	(0.68)	(0.50)	(0.76)	(0.47)
Observations	8,738	60,397	8,485	58,115
R-squared	0.645	0.502	0.648	0.505
City*IndustryFE	No	YES	No	YES
Province*Industry FE	YES	No	YES	No
Year*Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table A6: DDD Regressions on Existing Firms (*MarketEntry* and *ArbitraryPenalty*)

This table presents results of our main DID regressions, where the treatments are *MarketEntry* and *ArbitraryPenalty*. The initial sample covers all non-SOE manufacturing firms with non-missing variables from 2000 to 2009, excluding the utility industries (electricity, gas, and water industry). Further, the sample in this table only include "existing firms", which are established in at least one year before the national shock and survive at least one year after the national shock. In Columns (1)-(5), treatment is *MarketEntry*, which is a dummy variable which equals 1 for treated province-industry categories that are either traditionally monopolized industries or have SOE-asset-to-total-asset ratio exceeding 50% in 2004. In Columns (6)-(10), treatment is *ArbitraryPenalty*, which equals 1 if the province responds to the "Arbitrary Penalty Clause" with detailed implementation strategy relevant to arbitrary fines. The dependent variables are firm-level characteristics such like *TFP*, *ROA*, *OROA*, etc. *Pre1* (*Pre2*) is a dummy variable that indicate one (two) year(s) before the year when the local government release their own provincial provisions in respond to "36 Clauses". *Post* is a dummy variable which equals 1 for years during or after the year when the local government releases their own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the city-year level. Control variables include macro-level controls, such like *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such like *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect and industry×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = MarketEntry					*Treatment = ArbitraryPenalty*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*
Post	0.209***	0.069***	0.084***	0.319***	0.328***	0.375***	0.129***	0.134***	0.536***	0.643***
	(3.51)	(3.62)	(3.74)	(4.69)	(3.47)	(4.35)	(4.80)	(4.20)	(6.53)	(6.16)
LogInfra	0.041**	0.010***	0.013***	0.054***	0.054**	0.059***	0.014***	0.019***	0.075***	0.089***
	(2.55)	(3.23)	(3.35)	(2.88)	(2.58)	(3.34)	(2.94)	(3.28)	(3.59)	(5.35)
*Treatment*Post*LogInfra*	0.015**	0.006***	0.008***	0.019**	0.012	0.044***	0.013***	0.013***	0.055***	0.065***
	(2.35)	(4.09)	(4.78)	(2.27)	(1.56)	(2.83)	(4.02)	(3.16)	(3.32)	(3.84)
*Post*LogInfra*	-0.036***	-0.012***	-0.015***	-0.049***	-0.047***	-0.057***	-0.019***	-0.022***	-0.076***	-0.085***
	(-5.88)	(-6.81)	(-7.53)	(-7.02)	(-4.60)	(-5.79)	(-6.90)	(-6.65)	(-8.08)	(-7.65)
*Treatment*LogInfra*	-0.021*	-0.006**	-0.009**	-0.028**	-0.020	-0.036	-0.009	-0.012	-0.046	-0.057*
	(-1.85)	(-2.45)	(-2.39)	(-2.21)	(-1.54)	(-1.28)	(-1.57)	(-1.62)	(-1.45)	(-1.94)
*Treatment*Post*	-0.055	-0.039***	-0.061***	-0.091	-0.010	-0.318***	-0.107***	-0.098***	-0.418***	-0.540***
	(-1.07)	(-3.23)	(-3.92)	(-1.47)	(-0.16)	(-2.60)	(-3.63)	(-2.65)	(-3.36)	(-4.00)
*Treatment*Pre1*	0.019	-0.004	-0.005	0.019	0.041*	-0.004	0.002	0.004	-0.010	-0.007
	(0.91)	(-0.78)	(-0.82)	(0.77)	(1.84)	(-0.10)	(0.32)	(0.45)	(-0.24)	(-0.17)
*Treatment*Pre2*	-0.022	-0.006	-0.009	-0.022	-0.013	-0.009	-0.001	0.006	-0.017	-0.001
	(-1.31)	(-1.32)	(-1.62)	(-1.22)	(-0.68)	(-0.39)	(-0.10)	(0.71)	(-0.67)	(-0.04)
LogPopulation	-0.065	0.000	-0.003	-0.200**	-0.133	-0.062	-0.002	-0.006	-0.185**	-0.120*
	(-1.09)	(0.06)	(-0.32)	(-2.17)	(-1.65)	(-1.20)	(-0.28)	(-0.70)	(-2.19)	(-1.77)
LogGDP	0.093	-0.002	-0.005	0.127	0.061	0.069	-0.000	-0.005	0.108	0.034
	(1.10)	(-0.18)	(-0.41)	(1.02)	(0.52)	(0.86)	(-0.05)	(-0.41)	(0.90)	(0.33)
LogRevenue	-0.064	-0.001	-0.002	0.031	0.013	-0.052	-0.001	-0.000	0.035	0.012
	(-1.43)	(-0.13)	(-0.16)	(0.51)	(0.21)	(-1.13)	(-0.16)	(-0.00)	(0.57)	(0.21)
Unemployment	0.042	0.005	0.007	0.046	0.053**	0.033	0.004	0.005	0.029	0.059**
	(1.59)	(0.88)	(0.97)	(1.44)	(2.06)	(1.12)	(0.64)	(0.67)	(0.82)	(2.08)
LogAssets	0.004	-0.005***	-0.006***	0.345***	0.094***	0.002	-0.005***	-0.006***	0.342***	0.092***
	(0.73)	(-3.64)	(-3.57)	(31.96)	(19.07)	(0.43)	(-3.99)	(-3.81)	(30.40)	(17.96)
Tangibility	-0.017	0.007**	0.006*	0.068***	-0.024*	-0.017	0.007**	0.007*	0.067***	-0.027*
	(-1.18)	(2.51)	(1.92)	(3.93)	(-1.75)	(-1.18)	(2.37)	(1.91)	(3.78)	(-1.96)
Leverage	-0.027**	-0.011***	-0.018***	-0.025**	-0.016	-0.032***	-0.012***	-0.019***	-0.030***	-0.019*
	(-2.50)	(-4.40)	(-5.99)	(-2.35)	(-1.46)	(-2.89)	(-4.51)	(-6.10)	(-2.85)	(-1.76)
Pre1	-0.023	-0.017**	-0.027***	-0.016	-0.008	-0.025	-0.020**	-0.030***	-0.017	-0.019
	(-0.93)	(-2.24)	(-2.77)	(-0.62)	(-0.26)	(-0.91)	(-2.46)	(-2.87)	(-0.57)	(-0.57)
Pre2	0.012	-0.004	-0.009	0.017	0.032	0.011	-0.006	-0.012	0.019	0.021
	(0.74)	(-0.77)	(-1.35)	(0.98)	(1.59)	(0.61)	(-0.88)	(-1.57)	(1.03)	(0.96)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,112,488	1,112,250	1,112,460	1,112,489	1,112,489	1,051,963	1,051,725	1,051,935	1,051,964	1,051,964
R-squared	0.750	0.628	0.634	0.867	0.810	0.753	0.636	0.642	0.869	0.812

Table A7: DDD Regressions on Existing Firms (*Financing* and *Tax*)

This table presents results of our main DID regressions, where the treatment is *Financing* and *Tax*, respectively. The initial sample covers all non-SOE manufacturing firms with non-missing variables from 2000 to 2009, excluding the utility industries (electricity, gas, and water industry). Further, the sample in this table only include "existing firms", which are established in at least one year before the national shock and survive at least one year after the national shock. In Columns (1)-(5), treatment is *Financing*, which equals 1 if the province responds to the "Fiscal Clause" and "Financial Clause" by proposing detailed number of special funds/subsidies or establishing detailed strategies to ease the external financial constraints for the private firm. In Columns (6)-(10), treatment is *Tax*, which equals 1 if the province responds to the "Tax Clause" by establishing detailed implementing strategies.. The dependent variables are firm-level characteristics such like *TFP*, *ROA*, *OROA*, etc. *Pre1* (*Pre2*) is a dummy variable that indicate one (two) year(s) before the year when the local government release their own provincial provisions in respond to "36 Clauses". *Post* is a dummy variable which equals 1 for years during or after the year when the local government releases their own provincial provisions. *LogInfra* is the natural logarithm of total infrastructure investment at the city-year level. Control variables include macro-level controls, such like *LogPopulation*, *LogGDP*, *LogRevenue*, and *Unemployment*, and micro-level controls, such like *LogAssets*, *Tangibility*, and *Leverage*. Control variables are measured in the past year. The regression also controls for firm fixed effect, year fixed effect, province×industry fixed effect and industry×year fixed effect. Standard errors are clustered at the city level. Definitions of dependent variables and control variables can be found in Appendix A1. T-statistics of the coefficient estimates are reported in parentheses. ***, **, * indicate statistical significance at the 1%, 5% and 10% level, respectively.

	Treatment = Financing					*Treatment = Tax*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*	*TFP*	*ROA*	*OROA*	*LogSales*	*LogSalesPer*
Post	0.325***	0.085***	0.096***	0.461***	0.544***	0.432***	0.123***	0.144***	0.532***	0.633***
	(5.11)	(3.77)	(3.48)	(7.02)	(5.55)	(5.03)	(4.31)	(4.06)	(5.28)	(5.18)
LogInfra	0.058***	0.009***	0.014***	0.069***	0.089***	0.042***	0.010***	0.015**	0.063***	0.068***
	(3.90)	(2.87)	(2.62)	(3.76)	(6.50)	(2.94)	(2.89)	(2.57)	(3.50)	(4.49)
*Treatment*Post*LogInfra*	0.037***	0.006*	0.006	0.043***	0.055***	0.027**	0.007**	0.007	0.030**	0.048***
	(2.75)	(1.93)	(1.60)	(2.76)	(3.13)	(2.11)	(2.00)	(1.59)	(2.03)	(2.65)
*Post*LogInfra*	-0.050***	-0.014***	-0.017***	-0.065***	-0.071***	-0.052***	-0.016***	-0.019***	-0.066***	-0.074***
	(-7.64)	(-6.43)	(-6.62)	(-9.91)	(-6.90)	(-6.36)	(-5.40)	(-5.41)	(-6.90)	(-5.40)
*Treatment*LogInfra*	-0.032	-0.002	-0.005	-0.033	-0.057**	-0.003	-0.002	-0.004	-0.018	-0.024
	(-1.22)	(-0.36)	(-0.62)	(-1.08)	(-1.99)	(-0.13)	(-0.49)	(-0.64)	(-0.64)	(-0.90)
*Treatment*Post*	-0.267**	-0.040	-0.037	-0.341***	-0.470***	-0.343***	-0.084***	-0.093**	-0.347***	-0.509***
	(-2.53)	(-1.58)	(-1.12)	(-2.92)	(-3.49)	(-3.28)	(-3.07)	(-2.58)	(-2.88)	(-3.77)
*Treatment*Pre1*	0.006	0.000	0.005	-0.027	-0.025	-0.027	-0.005	-0.009	-0.003	-0.008
	(0.17)	(0.02)	(0.56)	(-0.78)	(-0.73)	(-0.88)	(-0.80)	(-1.05)	(-0.08)	(-0.22)
*Treatment*Pre2*	-0.012	-0.001	0.006	-0.033	-0.033	0.000	0.004	0.006	0.019	0.026
	(-0.55)	(-0.28)	(0.82)	(-1.40)	(-1.25)	(0.01)	(0.94)	(0.92)	(0.83)	(1.02)
LogPopulation	-0.062	-0.002	-0.006	-0.185**	-0.124*	-0.049	0.001	-0.002	-0.170**	-0.110
	(-1.22)	(-0.18)	(-0.59)	(-2.22)	(-1.90)	(-0.92)	(0.19)	(-0.20)	(-1.98)	(-1.58)
LogGDP	0.050	-0.006	-0.010	0.088	0.016	0.081	0.001	-0.000	0.117	0.034
	(0.67)	(-0.65)	(-0.90)	(0.77)	(0.16)	(1.09)	(0.16)	(-0.01)	(1.03)	(0.35)
LogRevenue	-0.038	0.003	0.004	0.051	0.026	-0.060	-0.003	-0.005	0.029	0.018
	(-0.84)	(0.37)	(0.38)	(0.82)	(0.47)	(-1.40)	(-0.33)	(-0.46)	(0.48)	(0.33)
Unemployment	0.051*	0.007	0.009	0.049	0.064**	0.017	-0.002	-0.002	0.013	0.028
	(1.89)	(1.11)	(1.17)	(1.52)	(2.39)	(0.69)	(-0.39)	(-0.38)	(0.44)	(1.24)
LogAssets	0.002	-0.005***	-0.006***	0.342***	0.091***	0.002	-0.005***	-0.006***	0.342***	0.093***
	(0.45)	(-3.74)	(-3.65)	(30.05)	(17.47)	(0.43)	(-3.92)	(-3.81)	(29.67)	(18.38)
Tangibility	-0.018	0.007**	0.006*	0.066***	-0.027**	-0.020	0.006**	0.006*	0.064***	-0.029**
	(-1.24)	(2.33)	(1.87)	(3.80)	(-2.01)	(-1.33)	(2.20)	(1.70)	(3.67)	(-2.17)
Leverage	-0.031***	-0.012***	-0.019***	-0.030***	-0.020*	-0.030***	-0.012***	-0.018***	-0.028***	-0.018
	(-2.81)	(-4.46)	(-5.99)	(-2.75)	(-1.76)	(-2.72)	(-4.44)	(-6.00)	(-2.69)	(-1.60)
Pre1	-0.022	-0.016**	-0.028***	-0.005	-0.006	0.011	-0.010	-0.016	0.002	0.013
	(-0.82)	(-2.05)	(-2.67)	(-0.20)	(-0.20)	(0.35)	(-1.12)	(-1.36)	(0.05)	(0.34)
Pre2	0.016	-0.004	-0.011	0.026	0.036	0.021	-0.005	-0.010	0.013	0.020
	(0.96)	(-0.61)	(-1.39)	(1.45)	(1.61)	(1.16)	(-0.96)	(-1.50)	(0.61)	(0.95)
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Province*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year*Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,051,963	1,051,725	1,051,935	1,051,964	1,051,964	1,051,963	1,051,725	1,051,935	1,051,964	1,051,964
R-squared	0.753	0.636	0.641	0.869	0.811	0.754	0.637	0.642	0.869	0.812