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Hao Liang, Rong Wang and Haikun Zhu

Growing up under Mao and Deng:
On the ideological determinants
of corporate policies



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Abstract

Economic activities have always been organized around certain ideologies, yet little is known about how ideology shapes corporate behavior and how it is different from other political forces. We investigate the impact of politicians' ideology on corporate policies by exploring a unique setting of ideological change in China from Mao's ideology to Deng's around 1978. Using textual analysis based on keywords in People's Daily, we find a discontinuity in ideological exposure among people who later became city mayors. Those who were at least 18 years old in 1978 and had joined the Chinese Communist Party (CCP) are more likely to have adopted Mao's ideology, and those who did not join by 1978, due to age limit, but joined soon thereafter were more likely to have adopted Deng's ideology. This ideological difference has had an enduring effect on contemporary firm and city policies. Firms in cities governed by mayors with Mao's ideology have made more social contributions, lowered within-firm pay inequality, and pursued less internationalization than those with Deng's. These effects are stronger in firms with political connections, less state ownership, and more government subsidies as well as in regions that are more market-oriented and not "revolutionary bases." Our results are robust to OLS regressions with various pair fixed effects besides regression discontinuity. We further find that corporate policies promoted by Mao's ideology are associated with slower firm growth but greater stakeholder engagement.

Keywords: political ideology, corporate policy, regression discontinuity, China

JEL Classifications: G30, M14, P16

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1 Introduction

Throughout history, socio-economic development has been shaped by ideology. According to Piketty (2020: 3), ideology refers to “a set of a priori plausible ideas and discourses describing how society should be structured. An ideology has social, economic, and political dimensions. It is an attempt to respond to a broad set of questions concerning the desirable or ideal organization of society.”¹ Other scholars consider ideology as encompassing “subjective mental constructs” that generate social cognitions resting on distorted perceptions of reality (e.g., North, 1990; Benabou, 2008). Ideology operates through language and discourse with the aim of producing specific effects (Larrain, 1979; Thompson, 1984) and forms the basis of economic or political theory and policy. For example, in the United States, political ideology typically falls along the liberal-to-conservative continuum (George, 1998), and it is believed that liberals (Democrats) favor government and conservatives (Republicans) favor corporations (Howard and Nixon, 2002).

In economics more specifically, Benabou (2008) considers ideologies as collectively sustained distortions regarding the proper scope of governments versus markets. Given the important role that ideology plays in economic activities, there is surprisingly limited evidence on how it affects corporate decisions.² Studying the role of ideologies in corporate decisions is important in understanding how resources are allocated across projects and social groups.

Our key insight is that ideology is a behavioral bias distinct from rational economic and political incentives that affects agents’ decision-making and economic activities. Once a certain ideology is formed, individuals collectively make decisions consistent with it, regardless of external incentives. As a result, corporations may voluntarily design policies around an ideology even without economic and political incentives.

Studying the impact of political ideologies can be empirically challenging. First, it is notoriously difficult to measure ideology. Present-day political ideology increasingly transcends traditional left versus right boundaries and falls along a spectrum (Walsh, 2012; Jacoby, 2014). Ideological foundations are often vaguely defined and therefore difficult to trace to a specific social group. Most studies use ex post political status (i.e. political left or right), donations to political campaigns,

¹ The Merriam-Webster dictionary defines ideology as a systematic body of concepts, especially those of a particular group or political party, about human life and culture. Other definitions include (a) a manner or the content of thinking characteristic of an individual, group, or culture; (b) the integrated assertions, theories, and aims that constitute a socio-political program. Source: <https://www.merriam-webster.com/dictionary/ideology>.

² A sparse literature in the economics and management has found that different ideologies (typically coarsely defined such as left, center, or right) relate to economic policies (Kalt and Zupan, 1984; Potrafke, 2018), corporate investment (Gupta, Briscoe, Hambrick, 2017), within-firm gender inequality (Carnahan and Greenwood, 2018), and individual risk-taking (Laudenbach, Malmendier, Niessen-Ruenzi, 2018). However, these studies either focus on specific macroeconomic policy and individual behavior or investigate corporate behavior without an empirically compelling identification on the causality.

or both to proxy for individual ideologies.³ This obscures the fact that the definition of political right and left varies over time and across areas and cannot be captured by a single characteristic.⁴ As a result, there is ambiguity regarding ideology's implications for economic activities. This ambiguity impedes disentangling the effect of ideology from that of other political and economic incentives (such as reciprocity). Second, ideology and economic activities are likely to be endogenously formed. It is difficult to rule out the alternative explanations because of reverse causality (i.e., ideology can reflect certain sort of economic activity) as well as omitted variables in the cross-section; that is, both ideology and economic activities are influenced by such factors as education and social norms (Cantoni et al, 2017).

We overcome these challenges by exploring a unique setting in China. First, this setting allows us to construct an *ex ante* ideology measure that relies on a sharp change in Chinese political ideology occurred in 1978. Before 1978—that is, during the Mao Zedong era⁵ (1949–1978)—Chinese Communist ideology embraced traditional “Marxist-Leninist doctrine” and rejected capitalism. Following the death of Mao, however, the communist government of China, led by Deng Xiaoping, dramatically changed course with the “Reform and Opening-Up” policy. Since then, China has hewed to a market economy and legitimated profit seeking, entrepreneurship, and foreign direct investment. These changes contrast sharply with the rhetoric and propaganda of Maoism. Our primary measure on ideology is therefore based on *when* an individual joined the CCP. A CCP member is considered to be influenced more by Mao's ideology if she joined the Party before 1978 and otherwise is considered to be influenced more by Deng's ideology. The ideological influence on CCP members occurs through the intensive training—usually featured by the current leader's ideology—that one receives upon and after joining the CCP. This indoctrination has been shown to have an enduring effect on an individual's own ideology (Marquis and Qiao, 2018). Given the sharp change in ideology around 1978, it is reasonable to expect the training content and consequently the ideology of an individual joining the CCP to differ fundamentally before and after 1978.⁶ This measure alleviates the concerns in the literature regarding the use of *ex post* characteristics and the difficulty in disentangling ideology from other political and economic incentives.

³ For example, Chin, Hambrick and Trevino (2013); Di Giuli and Kostovetsky (2014); Gupta, Briscoe and Hambrick (2017); Patil (2018)) use political donations to different political parties as proxies for ideology.

⁴ Recent studies show how the support to populist movements is associated with a number of voter characteristics (Becker, Fetzer, and Novy (2016); Guiso et al. (2017)).

⁵ Many consider the era of Mao's ideology ending in 1978, although Mao passed away in 1976. Within two years after Mao's death, the prevailing ideology in China did not change significantly until Deng emerged to be the new leader.

⁶ We validate this sharp change in political ideologies, using a textual analysis based on the content of the *People's Daily*, the official media voice of the CCP. Discussion on the analysis can be found in Section 3.1.

Second, we adopt a regression discontinuity design (RDD), in the spirit of Marquis and Qiao (2018), to address the potential endogeneity issue. The basic tenet of RDD is that an exogenously determined discontinuity in some explanatory variable helps researchers identify a (local) causal effect. In this setting, the age of an individual is an exogenous and predetermined qualification: from the inception of the CCP, individuals younger than 18 were not allowed to join the party (with very few exceptions). Thus individuals who did not join the CCP before 1978 because of the age qualification (e.g., the 17-year-old cohort) but then became members shortly thereafter (e.g., at age 19 or 20) constitute the control group, while those who were already above 18 years old (e.g., 18–19) in 1978 and joined the CCP constitute the treatment group.⁷ In this restricted sample of individuals within a small age range, it is reasonable to assume that they share similar personal characteristics with the exception of ideology⁸. Therefore the “age qualification” (i.e., whether someone was above 18 years old and joined the CCP) around 1978 captures the impact of ideological imprinting, which is distinct from other dispositional factors of mayors as well as economic conditions and other city and firm characteristics.

We focus on the ideology of city mayors, instead of CEOs, for two reasons. First, China’s economy features a “top-down” governance where politicians’ decisions dominate corporations’ (Walder, 1996; Haveman, Jia, Shi, and Wang, 2017). There are various channels through which mayors can influence corporate policies, such as providing special deals to firms that comply with their ideology, directly influencing corporate decision-making through private connections, and promulgating distorted policies and regulations. Second, we can observe the year when mayors joined the CCP to properly identify the treatment and control groups. This information is not available for most CEOs.

The political economy literature has generally classified the difference between Mao and Deng in terms of their ideology and corresponding economic policies into three pillars (e.g., Naughton, 1993; Lotta, 1994; Chang, 1996; Naughton, 1996): (1) the trade-off between social and economic benefits, (2) the gap between rich and poor, and (3) the choice between being self-sustaining and leveraging foreign capitalism. We follow the literature and map these pillars into corporate policies and test how ideology affects a firm’s social contribution, wage inequality, and its degree of internationalization.

⁷ Our research setting is similar to the one in Mullainathan and Washington (2009), where they test the cognitive dissonance theory by comparing the presidential opinion ratings of people who just turned into 18 years old and voted in the president’s election to those who were 17 years old and couldn’t vote in the president’s election due to the minimum voting age restrictions in the US.

⁸ In our empirical section, we consider a whole battery of observables and do not find significant difference in these observables between the two groups.

Our results show a discontinuity in ideological exposure among people who later became mayors. Specifically, those who were at least 18 years old in 1978 and had already joined the CCP were more likely to adopt Mao's ideology, and those who did not join by 1978 due to age limit but joined soon thereafter were more likely to adopt Deng's ideology. Such an ideological difference among politicians has had a lasting effect on contemporary city and firm policies. Firms in cities with mayors with Mao's ideology make more social contributions (e.g., tax contributions, employee payments, and donations) and show lower within-firm pay inequality (e.g., the ratio of average top-three executives to average employees' salary) and less internationalization (e.g., the proportion of foreign assets and foreign sales). Our results are robust to the inclusion of various city-, mayor-, and firm-level control variables and fixed effects in the OLS analyses. In particular, to alleviate the concern on the endogenous matching between mayors and cities, we include the city administrative rank-year-pair fixed effects and mayor native place-firm location fixed effects. Our conclusions also remain unchanged with explicit control of the ideologies of City CCP Secretary and of the CEO, with the removal of outliers from the sample, and in a battery of falsification tests.

In addition, to identify the economic mechanisms underlying the ideological effects and rule out alternative explanations, such as political and economic incentives and social norms, we partition our RDD sample based on CEOs' political connections, government ownership and subsidies, as well as the degree of market-orientation and the prevalence of CCP ideology in the local economy. We find that the effects are stronger in firms with political connections, absence of majority control by the state, and more government subsidies. These results point to the channels through which ideology affects corporate policy. We also find stronger effects in regions that are more market-oriented and not "revolutionary bases," indicating there is cross-regional variation in the ideological effect. Importantly, the effects remain statistically significant in most subsamples, suggesting that our results cannot be fully explained by other political and economic factors. Finally, we show that corporate policies promoted by Mao's ideology are associated with lower asset growth and return on sales but greater social scores and stakeholder value.

An important contribution we aim to make to the political economy of finance literature is disentangling political ideology from other political effects well documented elsewhere. Extant studies have documented strong influences on corporate policies and valuation by political connections and politicians' rent-seeking (Shleifer and Vishny, 1994; Faccio, 2006), government ownership (Megginson, Nash, and Randenborgh, 1994; Shleifer, 1998; Megginson and Netter, 2001; Boubakri, Ghoul, Guedhami, and Megginson, 2017; Bortolotti, Fotak, and Megginson, 2015), government spending (e.g., Cohen, Coval, and Malloy, 2011), political uncertainties e.g. around U.S. presidential elections (Julio and Yook, 2012; Hassan, Hollander, van Lent, and Tahoun, 2019), lobbying and political activism (Zingales, 2017; Ferracuti, Michaely, and Wellman, 2019; Neretina, 2019),

and political institutions, such as the electoral system (Roe, 2003; Pagano and Volpin, 2001; Pagano and Volpin, 2005; Perotti, 2014). We find that politicians with the same political incentives can adopt strikingly different economic policies depending on differing ideologies. Our study therefore joins the emerging literature on ideology as another important yet largely unexplored political determinant of individual and corporate behavior over the long run (e.g., Laudenbach, Malmendier, and Niessen-Ruenzi, 2018; and Marquis and Qiao, 2018).

Our findings also illuminate the growing literature of non-standard corporate behavior, especially on biased parties other than managers and investors. The literature on behavioral corporate finance and firm objectives suggests that a firm's non-standard behavior (i.e., conduct that does not maximize shareholder value) and the market's response help explain many puzzles in corporate finance (Malmendier and Tate, 2005; Malmendier, 2018). In particular, Malmendier (2018) highlights the importance of taking a "biased third parties" perspective in understanding non-standard corporate behavior, which is relatively underrepresented but the most cited compared to "biased investors" or "biased managers." These third parties may include financial intermediaries, rating agencies, regulators, lawmakers, or central bankers (Malmendier, Nagel, and Yan, 2017). By focusing on how local politicians as a biased third party can influence corporate behavior with their ideologies, our study contributes to this growing stream of the literature. In this regard, this paper also relates to the literature on the objectives of the firm (Tirole, 2001; Kitzmueller and Shimshack, 2012), which focuses on whether a firm aims to maximize the welfare of shareholders or stakeholders (Magill, Quinzii, and Rochet, 2015). Doing the latter might entail, for example, the provision of employee welfare and contributions to community and society (in the form of tax payments and donations). Recent studies have investigated how such shareholder versus stakeholder orientation is linked to left-right political ideology (e.g., Di Giuli and Kostovetsky, 2014; Gupta, Briscoe, and Hambrick, 2017; Gupta, Nadkarni, and Mariam, 2018). Our results are consistent with this line of research but offer new insights on how non-standard behavior and the objective of the firm can be explained by ideology.

Finally, our paper adds to the growing literature on how ideology shapes economic activities by providing systematic evidence at both the firm and city levels. Studies mostly investigate *whether* ideology matters and coarsely classify it into left and right or liberal and conservative. For example, some studies have found that, in tax cases, conservative judges are more likely to rule in favor of corporations (in terms of lower taxes) than for the government or the public, compared to liberal judges (Howard and Nixon, 2002; Staudt, Epstein, and Wiedenbeck, 2006; Epstein, Landes, and Posner, 2013). Others find that, in the context of litigation risk, firms affiliated with liberal judges are more likely to face securities class-action lawsuits (e.g., Huang, Hui, and Li, 2019). Such classification of ideology appears to be too simplistic, and the results may not be generalizable. Yet

empirical evidence is limited on *how* ideology matters, especially for firm policies, which lie at the center of the economic activities. By contrasting the fundamental differences in ideology between Mao and Deng regarding the relative merits of the market and the state, we can develop more systematic and nuanced predictions with specific direction of the effect. Such a broader focus not only deepens understanding of how ideology drives economic activities and outcomes, such as social contribution, inequality, and globalization, but also illuminates how the economy grows. Given our findings on the link between redistribution and growth at the firm level, which match some important observations in China's economy today, our work joins the debate on the fundamental institutions of China's economic development (Xu, 2011; Song, Storesletten, and Zilibotti, 2011).

2 Conceptual framework and hypotheses development

To understand the impact of political ideology on corporate policies in our setting, one needs to understand the fundamental differences in ideology between Mao and Deng as well as their institutional roots during China's economic and social transitions. In this section, we review the institutional background of China's ideological transition and these ideological differences, and lay out our conceptual framework of how ideological differences can lead to systematic differences in mayors' economic policies, which further translate into firm-level policies.

2.1 Institutional transition and the economic thoughts of Mao vs. Deng

On October 1, 1949, Mao Zedong, having led the Communists to victory against the Nationalists after more than 20 years of civil war, proclaimed the founding of the People's Republic of China. In 1958, Mao launched the "Great Leap Forward," a five-year economic plan, which collectivized farming and introduced labor-intensive industries. The drive resulted in an economic breakdown and was abandoned after two years but was then followed by the "Cultural Revolution," Mao's 10-year political and ideological campaign, which lasted until Mao died in 1976. From 1977 to 1978, Deng Xiaoping emerged as the dominant figure among pragmatists in the Chinese leadership. Since the end of 1978, China has undertaken nationwide far-reaching economic reforms, set in motion by Deng.⁹

The institutional transition in China was driven by an ideological transition. Maoism prevailed in China between the 1950s and the late 1970s. It is considered to be orthodox socialism in

⁹ A decisive turning point was the Third Plenary Session of the 11th Central Committee of the Communist Party of China held from December 18 to December 22, 1978. The conference marked the wholesale repudiation of Chairman Mao's "Cultural Revolution" policies and the beginning of the "Reform and Opening Up" policy and is widely seen as the moment when Deng became paramount leader of China.

that it stresses class struggle, central planning, and public ownership. Following Mao's death, however, a major ideological shift occurred as Deng took power.¹⁰ The communist government of China changed course with the "Reform and Opening-Up" policy, inaugurating a period when China began establishing a market economy and gradually opened to the outside world.

Generally, scholars have characterized the ideologies of Mao and Deng in terms of their economic policy with three broad categories (Naughton, 1993; Lotta, 1994; Chang, 1996; Naughton, 1996). First, compared to Deng, Mao emphasized the importance of social development and social contributions, relative to economic efficiency and development. Contrary to the Leninist vanguard model, Mao firmly believed that the Communist Party must not be separate from the popular masses and based his revolution upon the peasants, because they were poor and a political blank slate. These beliefs led to the Cultural Revolution. Central to the Cultural Revolution was the belief that the dictatorship of the proletariat had not wiped out bourgeois ideology; instead, the class struggle continued and even intensified. Therefore, a constant struggle against bourgeois ideology and its social roots must be undertaken.

Second, Mao and Deng also differed significantly on their views on inequality. Equality is a fundamental characteristic of socialism, which is rooted in Marxist doctrine—i.e., the idea that economic exploitation determines the class structure of every social order. Mao's ideology stems from the idea of equality and service to the people (Sen, 2013) and moved beyond the orthodox Marxism and Leninism by recognizing class, status, and power as equally distinctive aspects of the reality of social inequality (Young, 1973). Mao was determined to eliminate the status distinction between mental work and manual labor and strived to bridge the traditional status gap between physical and mental labor.¹¹

Even though Deng never abandoned the idea of equality, he believed that in general incentives motivate people to work harder and better.¹² Deng was convinced that it was "only fair that people who work hard should prosper."¹³ He proposed to reward individuals who were talented and higher achieving with promotions and pay raises. In 1992, Deng proclaimed the necessity to "let some people get rich first," which sidelined distributional considerations in exchange for greater

¹⁰ This ideological transition was subtle, despite its sharp contrast in content. When Deng introduced a market economy into China, the government carefully communicated this reform in a way that was ideologically congruent with communism. The government chose words to deliver the idea of reform and the "socialist market economy," avoiding "capitalism" and related words.

¹¹ This part of Mao's ideology led to the movement of millions of intellectuals and white-collar workers to the countryside to learn the art of self-reliance using their physical labor during the Cultural Revolution. Mao also encouraged workers and peasants to attack the elites—political leaders, intellectuals, professionals and well-educated people from formerly wealthy families.

¹² According to Chang (1996), the three pillars central to Deng's ideology on distributional equity were material incentives, the promotion of achievement, and "let some get rich first."

¹³ Deng, X. 1994. In the First Decade, Prepare for the Second. In *Selected Works of Deng Xiaoping*, Vol. 3, 1982–1992 (pp. 27). Beijing: Foreign Languages Press.

economic and income growth.¹⁴ According to Piketty, Yang, and Zucman (2019), income inequality in China has increased substantially since 1978: China used to be as equal as the most egalitarian Nordic countries during Mao's era, while it now approaches the U.S. inequality levels.

Third, Mao and Deng had sharp differences in their attitudes toward foreign capital and capitalists. A tenet of Maoism was the dichotomization of the world into "capitalist" and "communist/socialist" camps, leading to antagonism toward the outside world (e.g., Di, 1994; Raynard, Lounsbury, and Greenwood, 2013; Marquis and Qiao, 2018). Mao emphasized self-reliance and downplayed international cooperation in almost any form (except for foreign aid to other countries), which essentially closed China to the rest of the world. Such anti-foreign sentiment not only applied to Western capitalist countries but also to other countries with connections to the Western capitalist camp. Chinese who joined the CCP in that period were indoctrinated with a negative perception of most foreign countries, and "foreign capitalists" were described during their years of indoctrination as exploitative, mercenary, greedy, and ruthless.

In contrast, Deng instituted the "Reform and Opening-Up" policy in 1978 that initiated the gradual marketization of the economy. In addition to the introduction of market mechanisms, Deng also advocated the opening of China to trade, investment, and other contacts with the outside world. Deng believed that if China were to develop, it "must persist in opening to the outside world," because "for a country to isolate itself is only to its own disadvantage." Xenophobia was discouraged. Under Deng's plan, China would trade with other countries and import their capital and technology. Special economic zones and open cities were established, and he was willing to give generous and apparently heartfelt praise to advanced foreign experience. Much of this appears to relate to his respect for science and technology (Naughton, 1993).

2.2 Hypothesis development

Local politicians in China are incentivized by the "promotion tournaments" which prioritize local economic growth, a system that has been quite stable since 1978 (Li and Zhou, 2005). In a rational framework, a mayor would implement policies that favour local economic growth to maximize her chance of promotion. The literature has established that the main drivers of the economic growth, which include technological innovation, entrepreneurship with high productivity, and trade liberalization (Song, Storesletten, Zilibotti, 2011), are similar across regions. Therefore, we would expect to see similar growth-enhancing economic policies for cities with similar institutions and norms

¹⁴ To avoid permanent "polarization," Deng imagined that, when the time was "right," the government would use taxation to enforce a redistribution of wealth from the rich to the poor and from the prosperous coastal regions to the economically less developed inland regions. However, Deng was vague as to when that would occur.

(Xu, 2011). However, it is puzzling that, in reality, we observe cities with similar economic conditions and in the same region may adopt strikingly different policies. We argue that the difference in observed policies are partly attributed to the ideological difference of politicians.¹⁵

In our conceptual framework, a city mayor's preference in economic policies is shaped by her ideology in addition to the traditional political and economic incentives. Such ideological imprint introduces a sustained distorted belief (Benabou, 2008), such that defying it would create disutility for the mayor. As a result, when making economic policies, a mayor would maximize her perceived utility function which incorporates the ideological belief into the standard utility function. Consequently, a mayor's policy choices would reflect her ideological belief (pro-Mao or pro-Deng in our context).

Given the three key differences in ideology between Mao and Deng, we next develop testable hypotheses on the ideological impact on corporate policies. The first concerns social and economic coordination, which leads to different beliefs about how businesses and entrepreneurs are rooted in the popular masses and how much one should contribute to society. This can translate into the amount a company's revenue contributed to social causes, such as taxes, employee welfare, and community donations.

The second difference concerns inequality, which can be reflected in within-firm pay inequality (Mueller, Ouimet, and Simintzi, 2017). Firms influenced by Mao's ideology would stress equality and thus a smaller difference in pay would exist between the top earners (e.g., CEOs) and the average employee. In contrast, firms influenced by Deng's ideology would focus more on monetary incentives and thus may have a much larger difference in pay.

The third difference—the attitude toward foreign capitalists—should have left different imprints on firms' internationalization, involving both the inward and the outward foreign direct

¹⁵ For example, Chengdu and Chongqing are two major cities in Southwest China, with the former being the capital of Sichuan Province and the latter being the municipality direct under the jurisdiction of the central government. The two cities share similar cultures and norms, and have similar levels of economic development and political importance. They have also established strategic cooperation in the last two decades and both are hailed as leading economic engines in the region.

Huang Qifan, who was born in 1952 and joined the CCP in 1976, when it was under Mao's ideological influence, was the mayor of Chongqing from 2010 to 2016. Ge Honglin, who was born in 1956 and joined the CCP in 1986 under Deng's regime, became the mayor of Chengdu in 2003 and had since governed the city until 2014. The two politicians with similar ages have a lot in common: both had experience working in state-owned enterprises, and were in Shanghai before being assigned to be paramount political leaders in the corresponding cities. However, the two mayors had dramatically different styles in governing their cities. During Huang's administration in Chongqing, he focused on the development of local state-owned sector on the one hand by giving significant policy preferences to state-owned (holding) financial enterprises and large-scale government-led infrastructure investment, and vigorously promoting the IPOs of local SOEs. On the other hand, he deprioritized innovation and internationalization, resulting in R&D investment in Chongqing much lower than national average, and the international trade volume dropping by over 10% under his reign. In contrast, during Ge's administration in Chengdu, he brought up the concept of "professional mayor" who should be the CEO of the city, and put great emphasis on innovation, governance, and internationalization. In 2016, Chengdu's foreign trade volumes increased by 11%, and R&D investment accounted for 2.4% of the local GDP, much higher than before and than other cities in China.

investments (FDI).¹⁶ Firms influenced by Mao's ideology—that is, with an antagonism toward foreign capitalists and a focus on self-reliance—would be less open to FDIs. This belief contrasts with that of firms governed by politicians under Deng's ideological influence, which pursue international expansion.

As we focus on the ideology of city mayors but investigate the policies primarily at the firm level, it is important to delineate the transmission mechanism from city mayors to companies. There are various possible channels. First, mayors usually control important resources and can wield their political power and administrative capacity to provide “special deals” in the form of cheaper credit and subsidies for favored firms (Bai, Hsieh, and Song, 2019). This mechanism is essentially a channel through which firm managers rationally exploit politicians' biases by catering to mayors' ideologies. Second, ideology-biased local politicians may introduce distorted policies and regulations that force firms in their cities to make non-value-maximizing investments (Cohen, Coval, and Malloy, 2011; Kalt and Zupan, 1984; Potrafke, 2018). Third, local politicians may directly influence firm decision-making and behavior through private and personal connections with corporate executives—perhaps the most subtle but efficient way to influence corporate policies. Based on these arguments, we form three hypotheses below. We will formally test these hypotheses as well as the potential channels in the next section.

H1: Firms in cities with mayors under Mao's ideological influence make more social contributions than those under Deng's.

H2: Firms in cities with mayors under Mao's ideological influence have a lower within-firm wage inequality than those under Deng's.

H3: Firms in cities with mayors under Mao's ideological influence are less international than those under Deng's.

¹⁶ Starting in the late 1970s, foreign capital entering China was primarily from the U.S., Canada, and Western Europe, and the major overseas markets for Chinese firms were developed countries, such as the U.S., Australia, and Canada (Marquis and Qiao, 2018).

3 Data and methodology

3.1 Data

The primary data source for our study is the China Stock Market & Accounting Research (CSMAR) Database, one of the most comprehensive databases for Chinese business research, which covers data on the Chinese stock market, financial statements, and corporate governance of companies listed in China. It also provides information about city politicians' characteristics, firm characteristics, and city-level macroeconomic indicators. We supplement the data on firm characteristics by using Datastream and WIND and collect additional city-level data from the National Bureau of Statistics of China website. Our sample period spans 2007–2017, as data for our key dependent variables, such as social contributions (from CSMAR) start from 2007.

Our main dependent variables are three sets of firm-level policies that map the three fundamental differences in economic thought between Mao and Deng (and our three hypotheses): social contributions, wage inequality, and the degree of internationalization. First, a firm's social contribution is defined as the ratio of the sum of total tax contribution, employee payment, interest expense, and donations over its total book value of equity.¹⁷ These items capture different aspects of a firm's contribution to stakeholders and the society at large. Second, in the spirit of Mueller, Ouimet and Simintzi (2017), wage inequality is defined as the ratio of the average top three executive incomes to average employee incomes. A higher ratio implies a larger within-firm income inequality. Third, we construct two measures on a firm's internationalization—foreign assets ratio and foreign sales ratio. Foreign assets ratio is defined as the total assets of the overseas subsidiaries to total assets, and foreign sales ratio is defined as the total international sales to total revenue.¹⁸

Our main explanatory variable is a mayor's ideology. We measure a mayor's ideology according to whether she joined the CCP before or after 1978¹⁹ for two reasons. First, the sharp change in ideology from Mao's to Deng's since 1978 offers a clear measure for politicians' ideologies (Marquis and Qiao, 2018). To show the ideological change around 1978, we conduct a textual analysis by searching ideology-related keywords in *People's Daily*, the official newspaper of the

¹⁷ Our results hold when we exclude interest expense or taxes from a firm's social contribution. However, since there are many missing values on interest expense and taxes, we report results of using the original definition of social contribution in CSMAR.

¹⁸ Available data on foreign assets in CSMAR start from 2013. We obtain data on foreign sales from Datastream for better coverage.

¹⁹ In addition to using a dummy variable to measure an individual's ideology, we also construct a continuous variable, which captures the influence of Mao/Deng's ideology on an individual. Specifically, for each year, the variable is calculated as the ratio between the number of years since 1978 over the total number of years since an individual joined the CCP, if she joined the CCP before 1978, and it takes a value of 1 if she joined the CCP after 1978. A smaller value implies a larger Mao ideological influence on the individual. Individuals who joined the CCP after 1978 are mostly influenced by Deng's ideology. Our OLS results hold when using this continuous measure of ideology.

CCP Central Committee and the key source of materials during the indoctrination process. The keywords related to Mao's ideology include "Chairman Mao (*Mao Zhu Xi*),"²⁰ "Class (*Jie Ji*)," "Imperialism (*Di Guo Zhu Yi*)," "Solidarity (*Tuan Jie*)," "Revolution (*Ge Ming*)." The key words related to Deng's ideology include "Reform (*Gai Ge*)," "Efficiency (*Xiao Lv*)," "Market (*Shi Chang*)," "Foreign Capital (*Wai Zi*)," "Economy (*Jing Ji*)." For every year during the 1969–2002 period, we calculate the frequency of a specific word appearing in *People's Daily* as follows:

$$frequency_{it} = \frac{nr.of\ appearance_{it} \times length_i \times 10000}{total\ nr.of\ words\ on\ People's\ Daily_t'}$$

where $nr. of\ appearance_{it}$ is the number of times a keyword i appears in *People's Daily* in a given year t ; $length_i$ is the total length in words of the keyword i ;²¹ and $total\ nr. of\ words\ on\ People's\ Daily_t'$ is the total number of Chinese characters in *People's Daily* in that year. We express this measure as a basis point by multiplying 10,000 for easy readability. This frequency measure can be considered as an index. Figure I presents the time series trend on the frequency of these ideology-related words. It shows that all keywords related to Mao's ideology experience a significant drop in frequency, whereas keywords related to Deng's ideology experience a significant increase in frequency after 1978. This suggests a significant shift in ideological language around 1978.

Second, as argued by Marquis and Qiao (2018), the intensive training that a person receives when joining the CCP shapes her ideology.²² Generally, the experiences people have in late adolescence and early adulthood significantly influence their personal characteristics later in life and in their careers (Erikson, 1982; Roberts et al., 2003; Caspi et al., 2005). In China, almost all mayors in China are members of the CCP. They are typically "activists" and join the CCP at an early age (the earliest is 18 years old), a sensitive period when individuals form their worldviews and political beliefs (e.g., Bianchi, 2014).

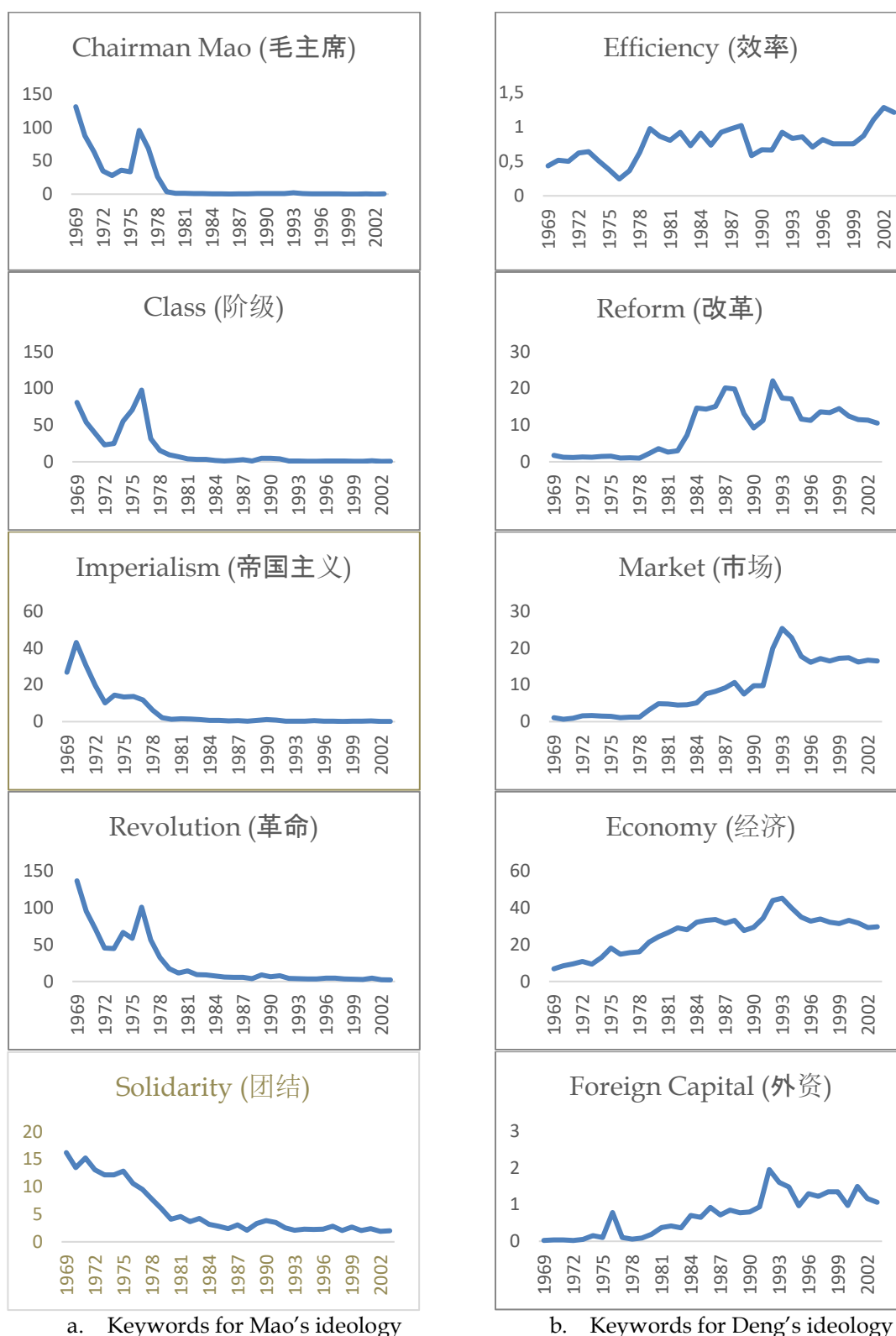
Even though individuals who joined the CCP before 1978 may adjust their ideology towards Deng's after 1978, Mao's ideology should still have a stronger impact on them due to the indoctrination process. In addition, while different politicians may have different ideologies of their own before joining the CCP, they will face the same political incentives designed by the Central Committee once they join. Therefore our measure better captures the difference in ideology, instead of the difference in political and economic incentives.

²⁰ "Chairman Mao" ("*Mao Zhu Xi*", or 毛主席) is a general term referring to Mao Zedong when he was still in power and also after he passed away in 1976. It was used to show loyalty and respect to Mao.

²¹ The length of the keyword is measured as the total number of Chinese characters in the keywords. For example, for "solidarity" (团结), which contains two Chinese characters, the length is two.

²² We provide more details on the indoctrination process in Appendix C.

Figure I Frequency of ideological keywords on People's Daily over time



This figure plots the frequency of ideological keywords on People's Daily over the period of 1969-2003. The left column reports the time series of frequency for keywords related to Mao's ideology, and the right column reports the time series of frequency for keywords related to Deng's ideology.

We also construct a number of variables related to firm and mayor characteristics and city-level macroeconomic variables that may affect firm policies. Specifically, firm characteristics include

firm size (total assets), ROA, leverage, Tobin's Q, and revenue growth. Mayor's characteristics include gender, race, education, work experience in state/private-owned enterprises. City-level macroeconomic variables include city GDP per capita, number of individual employees, and total wages for employees.

Table I Summary statistics

	N	mean	p50	sd	min	max
<i>Main variables</i>						
Pre1978mayor	26,345	0.14	0.00	0.35	0.00	1.00
Social contri. to equity ratio	25,973	0.21	0.17	0.16	0.03	1.04
Wage inequality	26,243	7.40	5.60	6.32	0.49	39.31
Foreign assets ratio (%)	14,576	1.40	0.00	3.72	0.00	14.71
Foreign sales ratio (%)	20,701	10.95	0.00	20.28	0.00	94.53
<i>Other firm characteristics</i>						
TobinQ	25,033	3.31	2.61	2.13	1.37	14.36
Return on asset (%)	26,342	3.93	3.73	5.98	-22.48	21.37
Return on sales (%)	26,301	9.26	2.54	7.21	14.54	10.81
Revenue growth (%)	24,215	7.00	10.76	34.32	-179.40	84.43
Leverage (%)	22,750	48.20	26.20	66.54	0.00	401.59
Ln(total assets)	26,345	21.94	21.75	1.42	19.02	26.87
Total assets growth (%)	22,802	11.43	9.37	19.69	-53.00	80.27
Government subsidies ratio (%)	24,193	0.59	0.11	0.81	0	5.05
Legal disputes involvement	26,345	0.13	0	0	0	0.34
Ln(1+legal disputes RMB value)	26,345	1.99	0	0	0	5.59
Increase in social score	17,992	0.41	0	0	1	0.49
<i>Politician characteristics</i>						
Gender (1=female)	1,005	0.06	0	0.24	0	1
Race (1=non-Han)	1,004	0.11	0	0.31	0	1
SOE Experience	1,004	0.29	0	0.45	0	1
POE Experience	1,004	0	0	0.05	0	1
Age	1,004	51	51	4	40	63
Pre1978mayor	1,005	0.12	0	0.33	0	1
<i>City-level economic variables</i>						
City GDP (billion CNY)	2,311	211	121	280	7	2,818
City GDP per capita (1 = 1 CNY)	2,311	47,851	32,682	48,075	1,489	506,301
City populations (1 = 1000)	2,313	4,630	3,850	3,280	180	33,920
Individual labor (1 = 1000)	2,267	551	305	771	0	9,517
Total employee wages (billion CNY)	2,303	26	12	57	1	900
Indi. Labor to population ratio (%)	2,267	12.5	5.1	8.5	14.3	14.0
Employee to population ratio (%)	2,305	12.1	6.1	8.8	14.6	11.6
Social spending to GDP ratio (%)	2,061	2.09	1.77	1.37	0.39	7.85
Urban-rural income gap	1,745	112.27	107.86	34.81	49.16	212.77
Foreign investment (million USD)	2,224	5,900	1,700	11,000	19.08	70,000

This table provides the summary statistics on firm, city politicians, and macro-economic variables for the whole sample. Our sample period spans from 2007 to 2017. Statistics are summarized at the firm-year level for firm characteristics, at the individual politician level for politician characteristics, and at the city-year level for city characteristics. All variable definitions are provided in Appendix A.

Table I reports the summary statistics of the main variables. Our final sample includes over 26,000 firm-year observations, consisting of more than 3,500 firms during the period of 2007–2017. About 14% of firm-year observations are in cities where their mayors joined the CCP before 1978. The mean (median) value of social-contribution-to-equity ratio is 0.21 (0.17). The average value of the wage inequality is 7.40, which suggests that the salary of the top three executives on average is about six times higher than that of an average employee. Interestingly, the minimum of wage inequality takes a value of 0.49. In addition, for our sample, less than 50% of firm-year observations have positive foreign sales or foreign assets.

Our sample includes 1,005 unique mayors, of which 12% joined the CCP before 1978, 6% are females, 11% are non-Han Chinese, and 29% have worked at SOEs. The average age of politicians is around 51. At the city level, the mean and median GDP are about 211 billion Chinese *yuan* (CNY; approximately 30 billion USD) and 121 billion CNY (approximately 17.3 billion USD). The average city population is about 4.6 million. The distribution of the amount of annual foreign investment in a city is quite skewed, with a mean of 5.9 billion USD and a median of 1.7 billion USD.

3.2 Empirical methodology

To test the impact of ideology on various firm policies, we adopt two empirical methods. First, we use an ordinary least squares (OLS) regression on a panel dataset. Our empirical model is specified as follows:

$$Y_{i,t} = a_0 + a_1 Pre1978mayor_{i,t} + a_2 X_i + a_3 Mayor\ Characteristics + a_4 City\ Characteristics + Firm\ FE + Year\ FE + CityPartySectary\ FE + IndustryYear\ FE + CityRankYear\ FE + \varepsilon_{i,t} . \quad (1)$$

The dependent variable $Y_{i,t}$ represents different firm policies: social contribution, wage inequality, and international trade. The key independent variable is *Pre1978mayor*, which takes the value of 1 if the mayor in the city where the firm i is based joined the CCP before 1978 and 0 otherwise. The subscript “ i/t ” indexes a firm/year. X_i contains firm characteristics, such as size, ROA, leverage, Tobin’s Q , and revenue growth. *Mayor Characteristics* include a mayor’s gender, race, education, major, and work experience in SOEs or private enterprises. *City Characteristics* contain macroeconomic factors at the city level, such as GDP per capita, size of employed population, and total employee wages. In addition, we control for firm fixed effects, year fixed effects, city CCP secretary

fixed effects,²³ industry-year pair fixed effects, and city rank-year pair fixed effects,²⁴ to capture time-invariant firm characteristics and time-varying industry and city characteristics. All standard errors are clustered at the mayor level.

However, the variable *Pre1978mayor* could be correlated with the age of a mayor and other unobservable factors not captured by our control variables and various fixed effects may drive both the year of joining the CCP and firm policies. If so, it would be difficult to pin down the causal effect of ideology. To address the potential endogeneity issue, we use a regression discontinuity design (RDD) in the spirit of Marquis and Qiao (2018). The basic tenet of RDD is that an exogenously determined discontinuity in some explanatory variables helps identify a (local) causal effect. In our setting, such a discontinuity is whether a politician had joined the CCP before 1978 due to the age limit. At its outset, the CCP established that one had to be at least 18 years old to join the party. Upon joining, almost all members needed to go through an extended “probation” period and received intensive indoctrination (see Appendix C). As such, a discontinuity in political beliefs exists between members joining before and after 1978, as a result of being indoctrinated differently. Politicians who joined shortly after 1978, because of the age limit are considered to be inculcated with Deng’s ideology, and serve as our control group. In contrast, those who were already 18 years old (or a few years older) by 1978 and had joined the CCP are considered to be inculcated with Mao’s ideology and serve as the treatment group. In this restricted sample of politicians within a small age difference,²⁵ it is reasonable to assume they have similar personal characteristics, except for ideology. Therefore, in this quasi-natural experiment design, the year in which the politicians joined the CCP, especially whether it’s before or after 1978, captures the difference in the ideology and helps distinguish the impact of ideology from that of other individual characteristics.

One potential concern is that the selection processes of joining the CCP might be different before and after 1978. However, as mentioned in Section 2.1, the Chinese government carefully communicated the reforms in a way that was ideologically congruent with the Communist doctrine (Marquis & Qiao (2018)). This suggests that the decision of who, whether, and when to join the

²³ In China, the CCP secretary and the mayor are the two most important leaders of a city. A city’s CCP secretary is mainly responsible for party-related affairs (such as personnel organization and propaganda) and strengthening the Communist Party’s leadership in the city, while the mayor is mainly responsible for the city’s economic policies and development. Therefore we focus on the ideology of mayors. By controlling for the city-party-secretary fixed effects, we hold constant the effects of a city’s CCP secretaries on firm policies.

²⁴ In our sample, cities have three types of administrative rank: sub-provincial city, prefecture-level city, and municipality. Cities with different administrative ranks have different relationships with the central government; normally, municipalities are the largest sized cities, and prefecture-level cities are smallest.

²⁵ Ideally, the control group would be politicians who were 17 years old in 1978 and joined the CCP in 1979, and the ideal treatment group would be politicians who were 18 years old in 1978 and had already joined the CCP. However, this would result in too few observations in the RDD sample. To increase the number of observations, in some analyses, the control group includes the 14– to 17-year-old cohort, and the treatment group includes the 18– to 21-year-old cohort in 1978.

CCP based on one's exposure to ideological influence outside the indoctrination process is not likely to differ significantly before and after 1978. Even if one is concerned that politicians are selected to join the CCP based on their ideology and those who chose to join after 1978 might possess certain ideologies distinct from those who did not join, this does not necessarily invalidate our RDD setting. As the focus of our empirical identification is on how the difference in politicians' ideology leads to different corporate policies, the source of the ideological difference does not matter much for our interpretation. In other words, the possibility of politicians being selected into the CCP based on their intrinsic beliefs does not bias our results, *as long as such selection is not driven by characteristics other than their ideology*.

We conduct three empirical tests to exam whether politicians with certain ideologies are selected to be mayors of some cities. First, we plot the geographic distribution of mayors having different ideologies over our sample period. In Figure A1 of Appendix B, cities in red are those with both mayors influenced by Mao's ideology and mayors influenced by Deng's ideology. Cities in green are the ones with only mayors influenced by Deng's ideology. We do not have cities with only mayors influenced by Mao's ideology, as, toward the end of our sample period, all cities in our sample have mayors with Deng's ideology (i.e., joining the CCP after 1978). Cities with missing data are marked in gray. Overall, we have data on mayors' ideology for 250 cities and about 147 cities with only mayors influenced by Deng's ideology. Across our sample, cities with different ideologies appear to be distributed evenly, instead of clustered in certain regions. For example, not all coastal cities (which tend to be more economically developed) are governed by mayors inculcated with Deng's ideology. It alleviates the concern that the appointment of a mayor with certain ideology is dependent on city-level characteristics, such as economic development.

Table II Summary statistics of subsamples

Panel A Full sample	<i>Pre1978mayor = 1</i>		<i>Pre1978mayor = 0</i>		Difference	t-stat
	N	Mean	N	Mean		
<i>Firm characteristics</i>						
Ln(total assets)	3,777	21.74	22,568	21.97	-0.23***	8.71
Return on asset (%)	3,777	3.75	22,565	3.96	-0.21**	1.96
Leverage (%)	3,481	52.64	19,215	47.40	5.24***	4.28
Revenue growth (%)	3,446	5.28	20,769	7.29	-2.01***	3.18
<i>Politician characteristics</i>						
Gender (1=female)	121	0.03	884	0.07	-0.04*	1.87
Age	121	54.68	883	51.37	3.31***	9.44
Race (1=non-Han)	121	0.11	883	0.11	-0.00	0.04
SOE experience	121	0.34	883	0.28	0.06	1.40
POE experience	121	0.01	883	0.00	0.01*	1.65
Education	121	0.69	884	0.82	-0.13***	3.37
Major	119	0.81	868	0.60	0.21***	4.42
<i>City-level economic variables</i>						
City GDP (billion CNY)	310	182	2,001	222	-40***	3.77
City GDP per capita (CNY)	310	48,911	2,001	43,924	4987***	2.42
Employee to population ratio (%)	306	13.40	1,961	11.11	-2.29***	4.26
Indi. Labor to population ratio (%)	306	12.48	1,996	10.81	-1.67***	4.20
Panel B RDD sample						
	<i>Pre1978mayor = 1</i>		<i>Pre1978mayor = 0</i>		Difference	t-stat
	N	Mean	N	Mean		
<i>Firm characteristics</i>						
Ln(total assets)	660	21.74	2,439	21.84	-0.11	1.59
Return on asset (%)	660	3.48	2,439	4.47	-0.99	1.02
Leverage (%)	630	54.79	2,152	47.46	7.33	1.58
Revenue growth (%)	590	2.03	2,240	-7.24	9.27	0.40
<i>Politician characteristics</i>						
Gender (1=female)	34	0.06	51	0.12	-0.06	0.90
Age	34	52.94	51	51.41	1.53***	2.55
Race (1=non-Han)	34	0.15	51	0.12	0.03	0.39
SOE experience	34	0.21	51	0.22	-0.01	0.11
POE experience	34	0.03	51	0	0.03	1.23
Education	34	0.88	51	0.75	0.14	1.55
Major	34	0.71	51	0.55	0.16	1.45
<i>City-level economic variables</i>						
City GDP (billion CNY)	83	160	136	206	-46	1.62
City GDP per capita (CNY)	83	41,827	136	44,834	-3,007	0.58
Employee to population ratio (%)	82	10.60	136	12.31	1.74	1.29
Indi. Labor to population ratio (%)	83	10.98	136	10.53	-0.45	0.48

The table provides subsample summary statistics of firm, city politicians, and macro-economic variables for the full sample in panel A and the RDD sample in panel B. Specifically, we report the number of observations and mean value of various variables for the subsample with city mayors who joined CCP in/before 1978 (*Pre1978mayor = 1*) and the subsample with city mayors joined CCP after 1978 (*Pre1978mayor = 0*), respectively. We also report the difference and the t-statistics of these variables across two subsamples. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. Variable definitions are provided in Appendix A.

Second, in Table II, we compare the summary statistics on two subsamples partitioned by whether city mayors joined the CCP before or after 1978. Panel A reports the results on the full sample and Panel B reports them on the RDD sample. In Panel A, there are more observations in the subsample of mayors who joined the CCP after 1978. This is likely because people who joined the CCP before 1978 are older and could have already retired during our sample period. We can also observe that mayors who joined before 1978 are older and more likely to be male. Interestingly, they are also more likely to have work experience in non-state-owned enterprises, majored in science and technology disciplines, and have earned a master's degree. Firms in cities with mayors who joined the CCP before 1978 are significantly smaller, having lower returns on assets and lower revenue growth but higher leverage than the other firms. In addition, Mao-influenced mayors govern cities with lower city GDP but higher GDP per capita. However, Panel B shows that the differences in the firm, city, and mayor characteristics between the two groups become statistically insignificant in our RDD sample. This is consistent with the visual evidence in Figure A1 that there is no clear pattern on the distribution of mayors' ideology across Chinese cities.²⁶ At last, the McCrary's density test fails to find a discontinuation of the distribution at age 18, which suggests no manipulation of the running variable, further validating our RDD setting.²⁷ As the "assignment" of mayors appears to be as good as random in our RDD sample, we can assume the infra-fractional standard errors are not correlated at the city mayor level, and are clustered at the firm level.

4 Results

In this section, we first present the empirical results of testing the impact of political ideology on various corporate policies and additional evidence from the textual analysis. We then explore the potential channels through which a city mayor's ideology affect firms and the implications for firm performance. Last, we present a battery of robustness tests.

4.1 The impact of ideology on firm policies

We present our results of regressing the three sets of outcome variables on the *Pre1978mayor* dummy in Tables III to V, respectively. Table III shows the results of firm social contribution as the dependent variable. Column (1) of Table III presents the OLS regression results of Model (1), with the coefficient on the *Pre1978mayor* variable being significantly positive at the 1% level. It is worth

²⁶ The only exception is the age variable, in which mayors who joined the CCP before 1978 are on average 1.5 years older than those who joined the CCP after 1978. This difference is expected and consistent with how we construct our RDD sample.

²⁷ As part of the McCrary's density test, Figure A2 in Appendix D shows the distribution of mayors' ages in 1978.

pointing out that since we control for the firm fixed effects, our results accentuate the within firm variations. In particular, the coefficient on the *Pre1978mayor* captures the impact of change in ideology due to mayor turnover. The economic magnitude of the coefficient implies that firms governed by mayors who joined the CCP before 1978 on average make 1.6 percentage points more social contributions than firms governed by city mayors who joined after 1978. Given that the average social contribution to equity ratio is 0.21, 1.6 percentage points represents about a 7.6% ($=0.016/0.21$) increase in social contributions to equity ratio. This result is consistent with our first hypothesis.

Columns (2) and (3) of Table III present the RDD results with a bandwidth of 3 or 4, respectively. That is, our control group includes politicians who were aged 15–17 or 14–17 in 1978 and joined the CCP soon after 1978, and our treatment group includes those who were aged 18–20 or 18–21 and CCP members in 1978. The RDD approach provides a causal estimation on the impact from politicians' ideologies to firms' social contributions. The results are again consistent with our prediction. The effects are stronger both statistically and economically than that in Column (1), as the RDD estimate captures the local average treatment effect. Overall, our results in Table III support the notion that firms in cities with mayors under Mao's ideological influence make larger social contributions on average.

Table III The impact of ideology on social contribution

	OLS	RDD	
	(1)	(2)	(3)
Pre1978mayor	0.016*** (0.005)	0.278* (0.169)	0.293*** (0.089)
Firm Controls	Y	N	N
City Politician Controls	Y	N	N
City Macro Controls	Y	N	N
Firm FE	Y	N	N
Year FE	Y	N	N
Industry×Year FE	Y	N	N
City Admin. Rank×Year FE	Y	N	N
Obs.	17,663		
R2	0.84		
Obs. Left		220	641
Obs. Right		2,376	2,409
Bandwidth		3	4

This table reports the regression results of the ideological impact on social contribution. The dependent variable is a firm's social contribution to equity ratio. A firm's social contribution is computed by summing up its total tax contribution, employee payment, interest expense, and donations. The key explanatory variable *Pre1978mayor* is a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. Column (1) reports the results from OLS regression. The OLS regression includes control variables for firm-level, city politician-level, and city macro-economic characteristics. Firm Controls include firm size, ROA, leverage, revenue growth rate and Tobin's Q. City Politician Controls include city mayor's gender, race, education level, and major, and work experience in state-owned or privately owned enterprises. City Macro controls include a city's GDP per capita, number of individual labor, and total employee wages. In addition, we control for firm fixed effects, year fixed effects, industry-year pair fixed effects, and city administrative rank-year pair fixed effects. For the OLS regression, standard errors are clustered at the city mayor level. Columns (2) and (3) report the results from RDD analysis with bandwidth at 3 and 4 respectively, and standard errors are clustered at the firm level. Standard errors are reported in the parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

Our second prediction is that firms in cities with mayors under Mao's influence have a lower level of within-firm wage inequality than those influenced more by Deng. We measure wage inequality by the ratio of the top three executives' average income over the average of employee income. A higher ratio indicates a higher level of inequality. Table IV shows the results. Column (1) reports the OLS regression results, and Columns (2) and (3) report the RDD results. In all three columns, the coefficient on *Pre1978mayor* is significantly negative, consistent with our prediction. Economically, given that the average wage inequality ratio is 7.4, the coefficient in Column (1) represents a 4.1% ($=0.3/7.4$) reduction in wage inequality.

Table IV The impact of ideology on wage inequality

	OLS	RDD	
	(1)	(2)	(3)
Pre1978mayor	-0.291* (0.153)	-7.569*** (2.417)	-12.155*** (2.401)
Firm Controls	Y	N	N
City Politician Controls	Y	N	N
City Macro Controls	Y	N	N
Firm FE	Y	N	N
Year FE	Y	N	N
Industry×Year FE	Y	N	N
City Admin. Rank×Year FE	Y	N	N
Obs.	17,640		
R2	0.76		
Obs Left		230	656
Obs Right		2,398	2,431
Bandwidth		3	4

This table reports the regression results of the ideological impact on within-firm wage inequality. The dependent variable is a firm's wage inequality, which is defined as the ratio of the average top 3 executive compensation to average employee income. The key explanatory variable *Pre1978mayor* is a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. Column (1) reports the results from OLS regression. The OLS regression includes control variables for firm-level, city politician-level, and city macro-economic characteristics. Firm Controls include firm size, ROA, leverage, revenue growth rate and Tobin's Q. City Politician Controls include city mayor's gender, race, education level, and major, and work experience in state-owned or privately owned enterprises. City Macro Controls include a city's GDP per capita, number of individual labor, and total employee wages. In addition, we control for firm fixed effects, year fixed effects, industry-year pair fixed effects, and city administrative rank-year pair fixed effects. For the OLS regression, standard errors are clustered at the city mayor level. Columns (2) and (3) report the results from RDD analysis with bandwidth at 3 and 4 respectively, and standard errors are clustered at the firm level. Standard errors are reported in the parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

Table V presents the results of testing our third hypothesis: firms in cities with mayors under Mao's ideological influence have a lower degree of internationalization. We capture a firm's degree of internationalization with firm's foreign assets (sales) ratio, which is defined as the total assets (sales) of overseas subsidiaries to total assets (sales) of the firm. The total assets (sales) of overseas subsidiaries are weighted by the percentage of ownership. Columns (1) and (4) report the results of the OLS regressions. In Column (1), the coefficient on *Pre1978mayor* is significantly negative, indicating that firms located in cities where the mayors are more influenced by Mao's ideology have lower foreign asset ratios. However, the coefficients on *Pre1978mayor* are not significant in Column

(4). The results are much stronger when using the RDD approach, as shown in Columns (2)–(3) for the foreign assets ratio and in (5)–(6) for the foreign sales ratio. Except for the result in Column (3), the coefficients on *Pre1978mayor* are all significantly negative, which support the third hypothesis that firms are more internationalized when mayors are more influenced by Deng’s ideology.

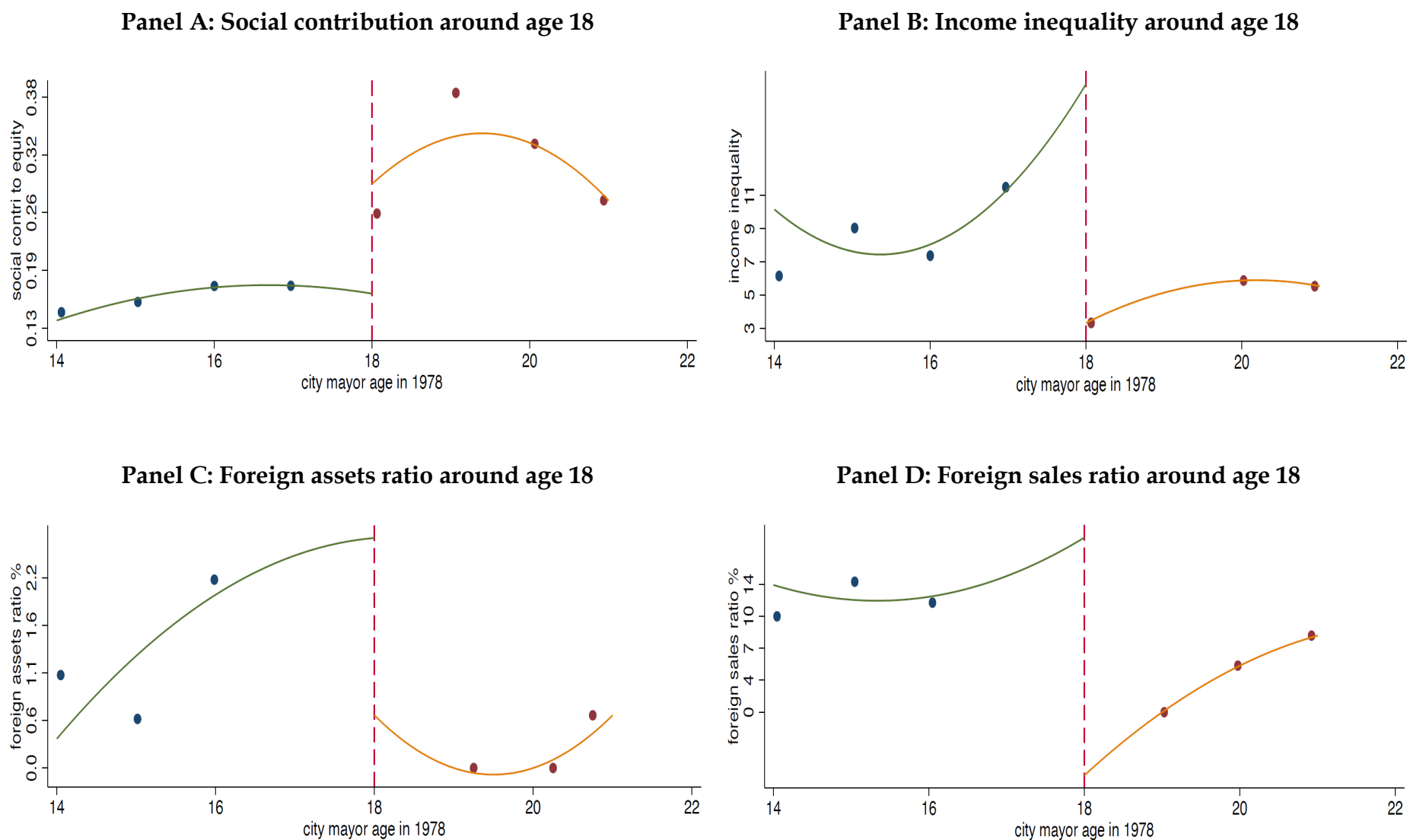
Table V The impact of ideology on corporate internationalization

	Foreign assets ratio (%)			Foreign sales ratio (%)		
	OLS	RDD		OLS	RDD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Pre1978mayor</i>	-0.447** (0.179)	-2.685*** (0.380)	-0.048 (0.785)	-0.005 (0.567)	-23.082*** (2.288)	-28.710*** (5.184)
Firm Controls	Y	N	N	Y	N	N
City Politician Controls	Y	N	N	Y	N	N
City Macro Controls	Y	N	N	Y	N	N
Firm FE	Y	N	N	Y	N	N
Year FE	Y	N	N	Y	N	N
Industry×Year FE	Y	N	N	Y	N	N
City Admin. Rank×Year FE	Y	N	N	Y	N	N
Obs.	8,115			13,317		
R2	0.81			0.87		
Obs Left		7	49		97	376
Obs Right		1,476	1,509		1,968	2,000
Bandwidth		3	4		3	4

This table reports the regression results of the ideological impact on a firm’s internationalization, measured by the ratio of its foreign assets to total assets (“Foreign assets ratio (%)”, Columns (1)–(3)), and the ratio of its foreign sales to total sales (“Foreign sales ratio (%)”, Columns (4)–(6)). The key explanatory variable *Pre1978mayor* is a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. Columns (1) and (4) report OLS regression results. The OLS regression includes control variables for firm-level, city politician-level, and city macro-economic characteristics. Firm Controls include firm size, ROA, leverage, revenue growth rate and Tobin’s Q. City Politician Controls include city mayor’s gender, race, education level, and major, and work experience in state-owned or privately owned enterprises. City Macro Controls include a city’s GDP per capita, number of individual labor, and total employee wages. In addition, we control for firm fixed effects, year fixed effects, industry-year pair fixed effects, and city administrative rank-year pair fixed effects. For OLS regressions, standard errors are clustered at the city mayor level. Columns (2)–(3) and (5)–(6) report RDD results with bandwidth at 3 and 4 respectively, and standard errors are clustered at the firm level. Standard errors are reported in the parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

Figure II plots the previously reported RDD results with a bandwidth 4 to visualize the change in firm policies around the cutoff. Panels A–D show that firms influenced by politicians in the treatment group indeed have a higher social contribution, less wage inequality, and less internationalization around the age cutoff.

Figure II Graphical Illustration of Regression Discontinuity for City Mayor Aged at 18 in 1978



The figures plot the discontinuity in the communist ideological imprint due to age difference in 1978 and an average firm’s social contribution to equity ratio (Panel A), income inequality (Panel B), an average firm’s foreign assets ratio (Panel C) and foreign sales ratio (Panel D).

4.2 Evidence from the textual analysis

Marquis and Qiao (2018) argue that the intensive training a person receives when joining the CCP shapes her or his ideology. The training upon joining the CCP varies over time in content and closely reflects the contemporaneous ideology and policies of the party. In this section, we provide textual-analysis-based evidence that the content of ideology imprinting shifted significantly around 1978. While it is difficult to obtain all historical training materials used around 1978, we conduct our textual analysis based on the content of *People's Daily*, one major material used in the indoctrination. As it is the official newspaper and the main source of CCP propaganda, the content of *People's Daily* timely reflects the central guideline of the CCP and sets tones to the rest media, and can represent the ideology in the training materials during CCP indoctrination.

We develop a text-based ideology measure for each mayor according to the extent of her exposure to a certain type of ideology during the indoctrination. Specifically, we search for the ideology-related words in the *People's Daily* and use the frequency of those words to measure the contemporaneous ideology for each year of our sample period.²⁸ The frequency of an ideology-related word in *People's Daily* in the year when a politician joins the CCP is a proxy for her exposure to certain type of ideology. As listed in Figure I, we focus on 10 most relevant keywords. “Chairman Mao (*Mao Zhu Xi*),” “Class (*Jie Ji*),” “Imperialism (*Di Guo Zhu Yi*),” “Solidarity (*Tuan Jie*),” and “Revolution (*Ge Ming*)” relate to Mao’s ideology, and “Reform (*Gai Ge*),” “Efficiency (*Xiao Lv*),” “Market (*Shi Chang*),” “Foreign Capital (*Wai Zi*),” and “Economy (*Jing Ji*),” relate to Deng’s ideology.

We first confirm that, during indoctrination, mayors who joined the CCP before 1978 were more exposed to Mao’s ideology, whereas those who joined the CCP after 1978 were more exposed to Deng’s ideology. This analysis is conducted at the mayor-level. Across all mayors, we measure their exposure to Mao’s or Deng’s ideology using the frequency of the ideology-related words in the *People's Daily* in the year they joined the CCP. We then regress this exposure measure to the dummy variable *Pre1978mayor*. Table VI presents the results, with Panel A showing those for exposure to Mao’s ideology and Panel B for Deng’s ideology. The coefficients on *Pre1978mayor* are all significantly positive in Panel A and significantly negative in Panel B. These results confirm that mayors who joined the CCP before (after) 1978 indeed had more exposure to Mao’s (Deng’s) ideology. Therefore our main variable *Pre1978mayor* does capture differences in ideology across mayors.

²⁸ The detailed definition of the frequency of words can be found in Section 4.1.

Table VI The text-based ideology measure

Panel A Keywords representing Mao's ideology					
	Chairman Mao (毛主席)	Class (阶级)	Imperialism (帝国主义)	Revolution (革命)	Solidarity (团结)
	(1)	(2)	(3)	(4)	(5)
Pre1978mayor	55.115*** (2.817)	60.271*** (2.850)	11.755*** (0.282)	62.285*** (2.357)	7.938*** (0.160)
City Politician Controls	Y	Y	Y	Y	Y
N	950	950	950	950	950
R2	0.74	0.77	0.92	0.83	0.89
Panel B Keywords representing Deng's ideology					
	Efficiency (效率)	Reform (改革)	Market (市场)	Economy (经济)	Foreign capital (外资)
	(1)	(2)	(3)	(4)	(5)
Pre1978mayor	-0.430*** (0.015)	-12.163*** (0.221)	-7.390*** (0.197)	-17.421*** (0.292)	-0.448*** (0.034)
City Politician Controls	Y	Y	Y	Y	Y
N	950	950	950	950	950
R2	0.59	0.43	0.22	0.67	0.17

This table reports the results of regressing a mayor's ideological exposure in the year when s/he joins the CCP to *Pre1978mayor*, a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. For each mayor j , we calculate her/his ideology exposure to a specific ideological word i according to the following equation:

$$Exposure_j^i = \frac{nr. of appearance_j^i \times length^i \times 10000}{total\ nr. of\ words\ on\ People's\ Daily}$$

Where $nr. of appearance_j^i$ is the total number of times a keyword i appears on the *People's Daily* in the year when mayor j joins the CCP; $length^i$ is the total length in words of the keyword i ; and $total\ nr. of\ words\ on\ People's\ Daily$ is the total number of words on the *People's Daily* in that year. The set of ideological keywords include "Chairman Mao (Mao Zhu Xi)", "Class (Jie Ji)", "Imperialism (Di Guo Zhu Yi)", "Solidarity (Tuan Jie)", "Revolution (Ge Ming)", "Reform (Gai Ge)", "Efficiency (Xiao Lv)", "Market (Shi Chang)", "Foreign Capital (Wai Zi)", "Economy (Jing Ji)". In addition, we include the city politician-level controls such as city mayor's gender, race, education level, and major, work experience in state-owned or privately owned enterprises. Standard errors reported in the parentheses are clustered at the city mayor level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

We next use the text-based ideology measures to test our hypotheses. That is, we use a mayor's exposure to different types of ideology (based on keywords from the *People's Daily* in her year of joining the CCP), instead of the dummy variable *Pre1978mayor*, and repeat the OLS regressions in Tables 3–5. Since we have 10 ideology-related words, we generate 10 text-based ideology measures for each mayor. Although all 10 words relate to either Mao's or Deng's ideology, some keywords, such as "Chairman Mao," broadly refer to a specific type of ideology, while others, such as "Foreign Capital," only refer to a specific dimension of an ideology. Therefore different keywords have different degrees of relevance to each of our hypotheses, and we try to match the most relevant keywords to the specific outcome variables (e.g., "Imperialism" and "Foreign Capital" are matched with internationalization, as both are about attitudes toward foreigners).

Table VII reports results from the textual analysis. Panel A reports results on corporate social contributions, showing that a mayor's exposure to Mao's ideology-related keywords (i.e., "Chairman Mao," "Class," or "Revolution") is significantly and positively correlated with firms' social contribution, whereas her exposure to Deng's ideology-related keywords (i.e., "Market," "Economy," or "Efficiency") has a significantly negative loading. Panel B shows the results on wage inequality, in which the wage inequality of a firm decreases with a mayor's exposure to the keyword "Class" and increases with a mayor's exposure to the keyword "Efficiency." These results comport with our intuition: class struggle is a main theme during Mao's period and focused on removing the difference across social classes, and such ideology would imply a lower level of wage inequality within a firm. On the other hand, Deng's ideology stresses economic efficiency, which is consistent with providing incentives to employees and enlarging the income gap. Panel C reports the results on the internationalization. "Imperialism" is a pejorative word to describe foreign capitalists. Mayors who have greater exposure to it should be more reluctant to internationalize. "Foreign Capital" is a term consonant with the "Opening-Up" policy and often used along with describing the helping hands of foreign investment in the Chinese economy since 1978. Mayors who have larger exposure to it are more likely to promote internationalization of firms in their cities. Again, the results are consistent with our conjectures. In sum, results in Table VII lend further support to our hypotheses and triangulate the previous tests based on the dummy variable indicating a city mayor's age and party membership in 1978.

4.3 Economic mechanisms and cross-regional variations

In this section, we explore the potential economic mechanisms through which a city mayor's ideology affects a firm's policies. First, we study how the connection between a firm's CEO and the mayor alters the ideological effect on corporate policies. Studies on Chinese companies have shown that sharing previous working experience, coming from the same hometown, and attending the same schools build strong connections between CEOs and politicians (Bai and Jia, 2016; Cantoni et al., 2017). In addition, CEOs who are former or current bureaucrats tend to appoint other bureaucrats as board directors (Fan, Wang, and Zhang, 2007).²⁹ As a result, connected CEOs may share ideologies with politicians who were former colleagues, fellow townsmen, or fellow alumni. Moreover, political connections per se can allow the government and politicians to directly interfere in a firm's decision-making (Faccio, 2006; Bortolotti and Faccio, 2009). Similarly, if a firm's CEO is connected to the mayor in the city where the firm is located, it is easier for the mayor to exert ideological

²⁹ In the U.S. context, Cohen et al. (2008) find that mutual fund managers place larger bets on firms when they are connected to board members of these firms. Cohen et al. (2010) likewise find that analysts with school ties to senior corporate officers have comparative information advantages and produce superior research reports.

Table VII OLS regression results using the text-based ideology measure

Panel A Social contribution						
Text-based ideology measures	(1)	(2)	(3)	(4)	(5)	(6)
Chairman Mao (毛主席)	0.00027*** (0.00007)					
Class (阶级)		0.00027*** (0.00006)				
Revolution (革命)			0.00028*** (0.00007)			
Market (市场)				-0.00149*** (0.00036)		
Economy (经济)					-0.00086*** (0.00026)	
Efficiency (效率)						-0.03157*** (0.00862)
Controls from Table III	Y	Y	Y	Y	Y	Y
N	17,429	17,429	17,429	17,429	17,429	17,429
R2	0.84	0.84	0.84	0.84	0.84	0.84
Panel B Wage inequality						
Text-based ideology measures	(1)			(2)		
Class (阶级)	-0.00578*** (0.00217)					
Efficiency (效率)				0.69292** (0.28519)		
Controls from Table III	Y			Y		
N	17,407			17,407		
R2	0.76			0.76		
Panel C Internationalization						
Text-based ideology measures	(1)			(2)		
Imperialism (帝国主义)	-0.00208* (0.00117)					
Foreign Capital (外资)				0.05950*** (0.02127)		
Controls from Table III	Y			Y		
N	13,304			13,304		
R2	0.77			0.77		

This table reports the OLS regression results by regressing corporate policies on the text-based ideology measure. The text-based ideology measure ($Exposure_j^i$) is defined as a mayor's exposure to a certain ideology-related keyword in the year when s/he joins the CCP. More specifically, for each mayor j , we calculate her/his ideology exposure to a specific ideological keyword i according to the following equation:

$$Exposure_j^i = \frac{nr. of appearance_j^i \times length^i \times 10000}{total\ nr. of\ words\ on\ People's\ Daily}$$

Where $nr. of appearance_j^i$ is the total number of times a keyword i appears on the *People's Daily* in the year when mayor j joins the CCP; $length^i$ is the total length in words of the keyword i ; and $total\ nr. of\ words\ on\ People's\ Daily$ is the total number of words on the *People's Daily* in that year. The set of ideological key words include "Chairman Mao (Mao Zhu Xi)", "Class (Jie Ji)", "Imperialism (Di Guo Zhu Yi)", "Solidarity (Tuan Jie)", "Revolution (Ge Ming)", "Reform (Gai Ge)", "Efficiency (Xiao Lv)", "Market (Shi Chang)", "Foreign Capital (Wai Zi)", "Economy (Jing Ji)". Panel A reports results on firm's social contribution. Panel B reports results on wage inequality, and Panel C reports results on internationalization. We maintain the same set of controls and various fixed effects as in Table III. For brevity, in panel C, we generate an indicator variable equals 1 if a firm has positive foreign assets ratio or/and positive foreign sales ratio, otherwise 0. Standard errors reported in the parentheses are clustered at the city mayor level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

influence on the CEO. Therefore we expect the correlation between a mayor's ideology and a firm's policies to be stronger if the CEO is politically connected.

To test this prediction, we define a CEO to be politically connected if she has worked in any government organization or if she has shared educational institutions, birthplaces or working places with the mayor of the city where her company is. Data on CEOs' and politicians' birthplaces and educational experience and CEO's past working places are manually collected from their CVs reported in CSMAR. We then partition our sample firms into two groups, based on whether a firm's CEO is politically connected, and repeat our baseline tests on these two subsamples separately. Results are reported in Panel A of Table VIII.³⁰ First, our ideology measure *Pre1978mayor* is significantly correlated with all three corporate policies measures in the expected directions, regardless of whether its CEO is politically connected. This suggests that our baseline results cannot be entirely explained by CEOs' political connections. Second, the ideological effect on corporate policy is economically larger in firms with politically connected CEOs. For example, the coefficient on *Pre1978mayor* is -35.88 in Column (3), compared with -6.17 in Column (4). These results corroborate our conjecture that the CEO's political connections are a channel through which a mayor's ideology influences firm policies.

Second, local politicians in China can influence firms through "special deals" (Bai, Hsieh and Song, 2019). Many Chinese firms, especially private ones, succeed in part by obtaining such a deal that enables them to either break formal rules or obtain favorable access to resources. These deals may come in the forms of better access to government procurement contracts (Schoenherr, 2019), cheaper credit with implicit debt guarantee (Borisova, Fotak, Holland, and Megginson, 2015), and more government subsidies (Lee, Walker and Zeng, 2014), which help relax recipients' budget constraints and enhance their profitability. Therefore, it is natural to expect that politicians are more likely to grant "special deals" to firms which comply with their ideologies.³¹

³⁰ For brevity, we only report results using the RDD approach with a bandwidth of 4. RDD results with other bandwidths are qualitatively similar and available upon request.

³¹ As argued by Bai, Hsieh and Song (2019), local politicians in China can derive personal benefits, either politically or monetarily by favoring (via "special deals") some firms.

Table VIII Economic mechanisms

Panel A Subsample results based on CEO's political connection								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Connected	Unconnected	Connected	Unconnected	Connected	Unconnected	Connected	Unconnected
Pre1978mayor	1.164***	0.149*	-35.875***	-6.167**	-5.206**	-3.680*	-30.575***	-26.944***
	(0.124)	(0.085)	(3.749)	(2.646)	(2.446)	(2.005)	(6.651)	(8.354)
Obs Left	295	348	296	360	20	29	168	208
Obs Right	973	1,436	980	1,451	475	1,031	748	1,252
Bandwidth	4	4	4	4	4	4	4	4
Panel B Subsample results based on government subsidies received by the firm								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High subsidy	Low subsidy	High subsidy	Low subsidy	High subsidy	Low subsidy	High subsidy	Low subsidy
Pre1978mayor	1.412***	0.084	-24.984***	-9.134***	-4.723***	-5.804*	-52.631***	-7.304
	(0.164)	(0.068)	(3.117)	(2.948)	(1.511)	(3.331)	(6.517)	(6.457)
Obs Left	264	377	270	386	22	27	126	250
Obs Right	1,080	1,329	1,084	1,347	694	815	885	1,115
Bandwidth	4	4	4	4	4	4	4	4
Panel C Subsample results based on state ownership								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	SOE	Non- SOE	SOE	Non- SOE	SOE	Non- SOE	SOE	Non- SOE
Pre1978mayor	0.353***	0.08	-15.157***	-23.809***	-3.520***	-8.235**	-49.980***	-56.062***
	(0.136)	(0.063)	(3.378)	(2.797)	(0.782)	(3.221)	(8.431)	(7.924)
Obs Left	262	379	263	393	15	34	159	217
Obs Right	669	1,740	673	1,758	384	1,125	579	1,421
Bandwidth	4	4	4	4	4	4	4	4

This table reports the results of cross-firm heterogeneity in the ideological impact on a firm's social contribution to equity ratio, wage inequality and internationalization (foreign assets ratio and foreign sales ratio) following the same specification in Column (3) of Table III. The key explanatory variable Pre1978mayor is a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. Panel A shows the results of partitioning the sample into subsamples of "connected" and of "unconnected" firms. A firm is defined as being connected if its CEO has worked in government organizations before, or shared the same birthplace, workplace or educational institution with the city mayor. Panel B shows the results of partitioning the sample into subsamples based on if a firm's subsidies from the government are above or below the median ratio of subsidies to total firm assets. Panel C shows the results of partitioning the sample into subsamples of state-owned enterprises (SOEs) of non-SOEs. SOEs are those firms with the government as the controlling shareholder (defined by CSMAR). Standard errors reported in the parentheses are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

To test this channel, we partition our sample into a high subsidies group and a low subsidies group, using the median amount of government subsidies received by the firm in our sample. We expect a mayor's ideology to have a greater impact on firm policies in the high subsidies group. Results reported in Panel B of Table VIII largely confirm our expectation. Across specifications, the effect of the mayor's ideology is significant in the subsample of firms with higher government subsidies. For the subsample of firms with lower subsidies, the coefficients on the *Pre1978mayor* variable are significant in most tests but with a smaller magnitude. These results comport with our expectation that mayors' ideology has a stronger impact on firms receiving special deals from the local government. In unreported results, we also partition our sample based on the sample median of a firm's cost of debt, defined as the ratio of interest payments over total amount of debt. We find that the ideological effect is stronger in firms with a lower cost of debt, again corroborating the channel of "special deals."

Third, we compare the effects of mayors' ideology on state-owned enterprises (SOEs) with that on non-state-owned enterprises (non-SOEs). SOEs are firms in which a government is the controlling shareholder. The government usually appoints the management team to guarantee the firm acts in its own interests. In contrast, the government has much less direct control over non-SOEs. Instead, it can influence non-SOEs through a subtler "invisible hand," such as ideological influence. Therefore we expect that a mayor's ideology would have a greater impact on non-SOEs. Results in Panel C of Table VIII mostly support our conjecture. Two observations from this table are worth noting. First, almost all coefficients on the *Pre1978mayor* variable are statistically significant, and the signs of the coefficients are consistent with previous results across all subsamples. These results suggest that the ideological effects on corporate policies are prominent among both SOEs and non-SOEs. Second, except for the results on social contribution, the magnitude of coefficients on the *Pre1978mayor* variable is significantly larger in the subsample of non-SOEs than that of SOEs. For example, the coefficient on *Pre1978mayor* is -23.809 in Column (4), compared to -15.157 in Column (3). The finding that SOEs under Mao's ideological influence make more social contributions than non-SOEs may be a result of SOEs providing better employee welfare. But across the board, a mayor's ideological influence seems to be more important in non-SOEs, where direct intervention in decision-making is less likely. Overall, results in Table VIII suggest that the ideology of a mayor can affect corporate policies through political connections of CEOs, government special deals, and an "invisible hand," in absence of direct control.

We next explore the cross-regional variations of the ideological effect. First, we investigate how the development of local market-oriented economy influences the impact of ideology on corporate policies. With a well-developed market and legal system, the government has less leeway to directly interfere in a firm's operation, as various parties can easily resort to enforceable contracts.

Instead, government influence is more likely to occur through the subtler ideological channel. In contrast, when the development of market intermediary and legal environment is poor, the government can adopt an administrative model by directly intervening in firm operations, and to rely less on ideological influence. We expect that a mayor's ideology has a stronger impact on corporate policies in regions that are more market-oriented. We use the National Economic Research Institute (NERI) Index of Marketization for Chinese provinces, created by Fan et al. (2011) and updated annually, to measure the development of Chinese regional markets. Specifically, the index describes the development of market intermediary and the legal environment.³² We sort firms into either High or Low group, based on whether the marketization index score for the focal province is above or below the sample median in each year.

Panel A of Table IX reports the results. First, coefficients on the *Pre1978mayor* variable are significant, and the signs of the coefficients are consistent with previous results in six out of eight specifications. These results suggest that our baseline results cannot be entirely explained by the market-orientation of the region. In addition, a mayor's ideology has a significantly larger correlation with firm policies in the high group than that in the low group. However, we fail to find a significant difference regarding the ideological effect on the foreign sales ratio between high and low groups.

³² The index is constructed based on the proportion of lawyers to local population, the proportion of registered accountants to population, producer protection, and customer protection. A higher level of index indicates better development of intermediaries and legal system (i.e., a higher degree of market orientation) of the local (provincial) economy.

Table IX Cross-regional variation

Panel A Subsample results based on the development in financial intermediary and legal environment								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	High	Low	High	Low	High	Low	High	Low
Pre1978mayor	0.137**	0.307	-23.359***	4.153	-9.940***	-5.410***	-33.022***	-21.527***
	(0.056)	(0.196)	(2.334)	(3.691)	(2.657)	(1.891)	(5.756)	(7.435)
Obs Left	540	101	550	106	26	23	304	72
Obs Right	2,141	268	2,155	276	1,401	108	1,799	201
Bandwidth	4	4	4	4	4	4	4	4

Panel B Subsample results based on revolutionary base								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RB	Non-RB	RB	Non-RB	RB	Non-RB	RB	Non-RB
Pre1978mayor	0.231***	1.358***	-1.277	-29.325***	-2.278**	-5.791***	-1.457	-42.409***
	(0.056)	(0.160)	(2.590)	(4.106)	(0.974)	(1.716)	(10.979)	(4.678)
Obs Left	249	392	262	394	4	45	145	231
Obs Right	490	1,919	491	1,940	410	1,099	443	1,557
Bandwidth	4	4	4	4	4	4	4	4

This table reports the results of cross-regional heterogeneity in the ideological impact on a firm's social contribution to equity ratio, wage inequality and internationalization (foreign assets ratio and foreign sales ratio) following the same specification in Column (3) of Table III. The key explanatory variable Pre1978mayor is a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. Panel A shows the results of partitioning the sample into two subsamples based on the development of financial intermediary and legal environment in their head quarter cities. High/Low indicates firms whose cities have above/below the median level of development in financial intermediary and legal environment in our sample. Panel B shows the results of partitioning the sample into two subsamples based on whether the firm is located in, or the city mayor comes from, a former CCP revolutionary base (RB) area or not (Non-RB). Standard errors reported in the parentheses are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

Second, we investigate how the effect of a mayor's ideology differs between regions with and without locally ingrained Maoism ideology.³³ We expect that the ideological influence on corporate policies should be weaker in regions where Maoism has taken strong root. The proxy for a Maoism-ingrained region is whether it was a revolutionary base of the CCP during the Japanese invasion and the Civil War. Revolutionary base areas, such as Yan'an, are where the CCP established its initial power, and they have a long tradition of collaboration between the CCP and local citizens. The development of revolutionary base areas was crucial to the CCP's eventual reign in China, and Mao's ideology is more strongly rooted in these areas. Even today, many memorial halls have been established in such places, serving to educate people about the history of Mao and the CCP. In general, people who grow up in the revolutionary base areas tend to believe more strongly in Mao's ideology and are less likely to be influenced by other ideologies. Therefore, we expect that, if a city mayor grew up in a revolutionary base area, the year of joining the CCP will have less impact on her ideology, as she was already inculcated with Mao's ideology. Similarly, if a firm is located in a revolutionary base area, it will be less influenced by its mayor's ideology.³⁴ To test this prediction, we sort firms into two groups. The revolutionary base (RB) group includes firms located in revolutionary base areas or cities whose mayors grow up in revolutionary base areas, and the non-revolutionary-base (nonRB) group includes the rest of the firms. Results in Panel B of Table IX largely confirm our prediction. We find that the coefficients on *Pre1978mayor* have a larger magnitude for the nonRB subsample than for the RB sample in all regressions.

4.4 Ideology and firm performance

So far, our results suggest that a mayor's ideology affects a firm's social contribution, wage inequality, and degree of internationalization. A natural question is whether such ideology-induced differences in corporate policies have a persistent impact on a firm's performance, such as growth, profitability, market value, and engagement in stakeholder welfare. The answer to this question might not be straightforward. On the one hand, it is reasonable to expect ideology-induced policy distortion to have real impacts on the firm and the economy. On the other hand, neither firms nor politicians with a consistently poor economic performance are likely to "survive" in the long run, because of market competition and political tournaments in China. Over time, politicians with a particular type of ideology that is related to poor economic outcomes may be replaced, and firms might also adjust their policies or develop alternative mechanisms to offset (or catch up with) the

³³ The complete list of the CCP revolutionary base areas is available upon request.

³⁴ It is possible that in cities strongly inculcated with certain ideologies, only people who share a similar ideology may be selected as mayors. This endogenous matching between city and mayors does not change our prediction.

negative (or positive) ideological effects. This is in line with Malmendier’s (2018) argument on rational investors and managers catering to the behavioral biases of third parties. Therefore, in equilibrium, it is unclear whether one should expect to observe significant differences in terms of profitability and valuation, unless there are structural and institutional impediments that may enable ideology-induced value destruction to persist, even after it is recognized as inefficient.

We test the implication on firm performance in two ways. We first use a two-stage regression approach. In the first stage, we regress a firm’s policy (social contribution, wage inequality, and internationalization) on the *Pre1978mayor* dummy and get the “fitted” value of firm policy from the regression. In the second stage, we regress several measures of firm performance (such as asset growth, return on sales, and Tobin’s Q) on these “fitted” values of firm policy (i.e., the variables *predicted* from the first stage). The two-stage approach enables us to see how ideology affects firm value through its impact on firm policies, and the models are specified below.

$$\text{First stage: } \quad \text{policy}_{ft} = \alpha + \beta \times \text{Pre1978mayor}_{ft} + \gamma' x_{ft} + \epsilon_{ft}$$

$$\text{Second stage: } \quad \text{performance}_{ft} = \alpha + \beta \times \widehat{\text{policy}}_{ft} + \gamma' x_{ft} + \epsilon_{ft}.$$

Alternatively, we estimate a reduced-form regression, directly relating firm performance variables to the *Pre1978mayor* dummy. The results from reduced-form regressions capture the overall impact of ideology on firm performance. Under this approach, we estimate the following model:

$$\text{performance}_{ft} = \alpha + \beta \times \text{pre1978mayor}_{ft} + \gamma' x_{ft} + \epsilon_{ft}.$$

Results are reported in Table X. We keep the same set of control variables and fixed effects as in the previous OLS regressions. Each of the five panels in Table X reports regression results on one measure of firm performance. The first four columns in each panel report the second-stage regression results from the two-stage approach (the first-stage results are already shown before), and the last column reports the result of the reduced form regression.

Panel A reports the results on a firm’s asset growth. We find that a greater social contribution is associated with less asset growth, whereas wage inequality and foreign asset ratio relate positively to it. The negative correlation between social contribution and asset growth may be explained by the fact that social contribution is economically costly and can limit the capital for a firm’s investment and thus slow growth. The positive correlation between wage inequality and asset growth is consistent with the notion that providing higher-powered incentives helps grow the business. The result from the reduced-form regression suggests that firms influenced more by Mao’s ideology on average have less growth, possibly because of their higher social contribution, as well as lower wage

inequality and foreign asset ratio. We obtain similar results when measuring firm growth by sales growth.

High growth of a firm's assets or sales does not necessarily translate into higher profits, which depend on investment efficiency. In Panel B of Table X, we investigate whether the ideology-induced differences in corporate policies affect a firm's profitability, measured by return on sales. We find a significant negative (positive) correlation between social contribution (wage inequality) and return on sales, implying that firms in cities with mayors influenced more by Mao's ideology have lower profitability on average. The result in Column (5) from the reduced form regression is consistent with those in Columns (1) and (2).

While corporate policies promoted by Mao's ideology are associated with lower growth and profitability, do they benefit stakeholder welfare and total firm value? To answer this question, we next examine their effects on a firm's engagement with stakeholders. We use two proxies for stakeholder engagement: one is whether the firm is involved in legal disputes,³⁵ which has been shown to be an important factor of stakeholder value (Hong, Kubik, Liskovich, and Scheinkman, 2019), and the other is a direct measure of stakeholder welfare, based on the change in a firm's social score of its ESG rating from Hexun.³⁶ The results are reported in Panels C and D of Table X, which shows that firms with more social contributions (Column (1)) or influenced more by Mao's ideology (Column (5)) on average are less likely to be involved in legal disputes and score higher in their social ratings. These results support the view that firms with a stronger influence from Mao's ideology have greater stakeholder engagement.

To corroborate the above results, we test the effects of ideology-induced corporate policies on a firm's Tobin's Q, measured by the market-to-book ratio of assets and capturing total firm value, which we argue includes the value of stakeholders. The results in Panel E of Table X show that firms with greater social contribution and lower wage inequality, or those influenced more by Mao's ideology, have higher Tobin's Q. These results echo the recent literature on stakeholder value maximization. Treating stakeholders, such as employees and community members, well contributes to total firm value (e.g., Deng, Kang, and Low, 2013; Servaes and Tamayo, 2013; Flammer, 2015; Ferrell, Liang, and Renneboog, 2016). Overall, our results suggest that the enduring effect of ideology on corporate policies is further translated into firm performance. Those influenced by Mao's ideology have lower growth and profitability but greater stakeholder value. However, these effects are not strong, suggesting that some firms with consistently poor performance cannot survive in the long run.

³⁵ In the analysis, we report the results using whether the firm is involved in a legal dispute from linear probability model. We obtain similar results when using the amount of RMBs involved in the lawsuit as the dependent variable.

³⁶ In this test, we focus on the Social dimension of ESG because we aim to infer the welfare effect of corporate policies on stakeholders, such as employees, customers, suppliers, and the community. In contrast, overall ESG ratings also capture environmental issues, which do not directly relate to stakeholders, as well as corporate governance issues that mostly concern shareholders.

Table X Ideology and firm performance

Panel A Dependent variable = Asset growth (t+1)					
	(1)	(2)	(3)	(4)	(5)
Social contri. to equity ratio	-1.480*** (0.557)				
Wage inequality		7.980* (4.819)			
Foreign assets ratio			7.619* (4.109)		
Foreign sales ratio				4.544 (40.322)	
Pre1978mayor					-2.364*** (0.560)
Controls and fixed effects	Y	Y	Y	Y	Y
N	17,626	17,603	8,105	13,308	17,668
Panel B Dependent variable = Return on sales (t+1)					
	(1)	(2)	(3)	(4)	(5)
Social contri. to equity ratio	-0.555*** (0.209)				
Wage inequality		0.028* (0.017)			
Foreign assets ratio			-1.401 (1.442)		
Foreign sales ratio				-1.995 (26.632)	
Pre1978mayor					-0.825*** (0.268)
Controls and fixed effects	Y	Y	Y	Y	Y
N	17,622	17,599	8,104	13,302	17,663
Panel C Dependent variable = Legal disputes involvement(Y/N) (t+1)					
	(1)	(2)	(3)	(4)	(5)
Social contri. to equity ratio	-0.024* (0.012)				
Wage inequality		0.001 (0.001)			
Foreign assets ratio			0.123 (0.076)		
Foreign sales ratio				0.064 (5.697)	
Pre1978mayor					-0.037*** (0.014)
Controls and fixed effects	Y	Y	Y	Y	Y
N	17,626	17,603	8,105	13,308	17,668
Panel D Dependent variable = Increase in social score(Y/N) (t+1)					
	(1)	(2)	(3)	(4)	(5)
Social contri. to equity ratio	0.100* (0.05)				
Wage inequality		-0.015 (0.061)			
Foreign assets ratio			-0.248 (0.272)		
Foreign sales ratio				-0.001* (0.000)	
Pre1978mayor					0.069*** (0.021)
Controls and fixed effects	Y	Y	Y	Y	Y
N	1,3595	13,586	6,597	10,555	13,628

Panel E Dependent variable = Tobin's Q (t+1)					
	(1)	(2)	(3)	(4)	(5)
Social contri. to equity ratio	0.101** (0.043)				
Wage inequality		-0.451* (0.273)			
Foreign assets ratio			-0.368 (0.276)		
Foreign sales ratio				-2.142 (14.302)	
Pre1978mayor					0.132*** (0.040)
Controls and fixed effects	Y	Y	Y	Y	Y
N	17,044	17,020	7,567	12,758	17,085

This table reports the results of analyzing the relation between ideology-induced corporate policies and firm performance. Columns (1)-(4) show the second-stage results of the following two-stage regressions:

$$\text{First stage: } policy_{ft} = \alpha + \beta \times Pre1978mayor_{ft} + \gamma'x_{ft} + \epsilon_{ft}$$

$$\text{Second stage: } performance_{ft} = \alpha + \beta \times \widehat{policy}_{ft} + \gamma'x_{ft} + \epsilon_{ft}$$

In the first stage, we regress a firm's social contribution, wage inequality, foreign assets ratio and foreign sales ratio respectively on *Pre1978mayor*, which is a dummy variable that takes a value of 1 if the city mayor joined the Chinese Communist Party in/before 1978, and 0 otherwise. In the second stage, we regress firms' asset growth rate (panel A), return on sales (panel B), legal disputes involvement(Y/N) (panel C), increase in social score (Y/N) (panel D), and Tobin's Q (panel E) on the predicted values of dependent variables obtained from the first stage regressions. Column (5) report "reduced form" results of directly regressing the above performance measures on the *Pre1978mayor* dummy as follows:

$$performance_{ft} = \alpha + \beta \times pre1978mayor_{ft} + \gamma'x_{ft} + \epsilon_{ft}$$

All regressions control for firm and city mayor characteristics, city macro-economic variables, firm fixed effects, year fixed effects, industry-year pair fixed effects, and city administrative rank-year pair fixed effects. Standard errors reported in the parentheses are clustered at the city mayor level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

4.5 City-level results

All results presented so far are at the firm level. Intuitively, mayors' ideologies should more directly affect city policies. This also relates to one of the channels we propose in hypothesis development (Section 2.2), that is, ideology-biased local politicians may introduce distorted policies and regulations that influence the whole city. Due to data limitations, it is infeasible to find the exact city-level equivalents to firm-level social contribution, wage inequality, and foreign assets/sales ratio or to simply aggregate these policies to the city level (as the majority of the firms in China are not publicly listed, whereas our sample consists of only listed firms). Nevertheless, we collect city-level data on social spending,³⁷ the urban-rural income gap from the website of National Bureau of Statistics of

³⁷ City-level social spending mainly includes the following items: the social insurance fund subsidy, retirement expenses of administrative institutions, the employment subsidy, the minimum living allowance for urban and rural residents, and living support expenditures for natural disasters.

China,³⁸ and the amount of foreign investment from CSMAR. We believe these are the best city-level equivalencies to the three types of firm policies. Analogous to the hypotheses on firm policies, we expect that cities where mayors joined the CCP before 1978 have higher social spending, lower urban-rural income gaps, and less foreign investments. Empirical results are consistent with our expectations. Table XI reports regression results by using the RDD approach, and the coefficients on *Pre1978mayor* are positive in the first two columns while negative in the last four columns. They suggest that mayors influenced by Mao's ideology are more likely to increase social spending, decrease the urban-rural income gap, and lower the amount of foreign investment, corroborating our firm-level analysis.

Table XI City-level analysis

	Social spending to GDP ratio		Urban-rural income gap		Ln(1+foreign inv. amt)	
	(1)	(2)	(3)	(4)	(5)	(6)
Pre1978mayor	0.654 (0.411)	1.713*** (0.599)	-97.242*** (15.576)	-125.532*** (16.787)	-2.791** (0.589)	-2.824*** (1.020)
Obs Left	33	80	33	81	35	81
Obs Right	112	112	98	98	127	127
Bandwidth	3	4	3	4	3	4

This table reports the regression results of the ideological impact on the city-level social security expense, inequality, and internationalization using the RDD approach. The dependent variables are the ratio of social spending to GDP in columns (1)-(2), the urban-rural income gap in columns (3)-(4), and the natural logarithm of total foreign investment amount in columns (5)-(6) at the city level. The key explanatory variable *Pre1978mayor* is a dummy variable which takes a value of 1 if the city mayor joined the Chinese Communist Party in/before 1978, and 0 otherwise. Standard errors reported in the parentheses are clustered at the city level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

4.6 Additional robustness tests

Endogenous matching between mayors and cities. We conduct a battery of robustness tests to further rule out alternative explanations. One major concern with our interpretation is that mayors with certain ideology may be purposely matched to some cities, which is a different channel from ideological indoctrination (either after or prior to joining the CCP). For example, one may argue that a politician with certain ideology may be more likely to be appointed as the mayor of a city that is of particular political importance or that prioritizes economic growth. However, we believe that this is unlikely a major issue, as the appointment of city mayors follows a mixed approach that combines local nomination with the selection by politicians at the higher (i.e., provincial or central government) levels in a rotating fashion to avoid local entrenchment and foster infra-factional competition (Jia, Kudamatsu, Seim, 2015; Fisman, Shi, Wang, Wu, 2020).

³⁸ See: <http://www.stats.gov.cn/>

This concern is partially addressed by including city administrative rank-year-pair fixed effects in the OLS results. The city administrative rank measures the political distance between a city and the central government. Our results still hold in the OLS tests after controlling for these fixed effects. In addition, we repeat our analysis in Section 4.3 on two subsamples based on the population of the city where a firm is located. More populous cities (such as Beijing, Shanghai, Guangzhou, Shenzhen, Chongqing, and Tianjin) typically have higher administrative ranks and are viewed as politically and economically more important in China. If a firm is in a city whose population is above (or below) the sample average, it belongs to the populous sample; otherwise, it belongs to the less populous sample. Results are reported in Panel A of Table XII. In general, the coefficients are statistically significant and economically comparable between both sub-samples for different corporate policies, suggesting that our ideological impact measure is independent of a city's political and economic importance.

To further alleviate the concern of the endogenous matching between a mayor and a city, especially that politicians coming from certain areas may be inherently different from politicians from other areas due to historical and geographical reasons, we additionally control for *Mayor native place* \times *Firm location* fixed effects. The *Mayor native place* is the province of a mayor's family origin, and aims to capture the mayor's or her family's early exposure to different culture and historical events such as the Japanese occupation, the Civil War, the Great Famine, and the Cultural Revolution that vary in intensity across regions and could shape her innate ideology. *Firm location* is also at the provincial level and captures the difference in local economic development. The interaction between *Mayor native place* and *Firm location* absorbs the latent probability of a mayor being assigned to a province due to her ideology which stems from the same family origin. In addition, we include *Economic zone* \times *Year* fixed effects in all regressions,³⁹ which absorb the time-varying differences in regional economic development. As shown in Table A2 in Appendix E, our results become even stronger with these additional fixed effects, indicating the endogenous matching (if any) between mayors and their placement locations, work against us in finding results.

³⁹ The concept of "economic zones" is developed by the Development Research Center of the State Council to classify provinces, autonomous regions and municipalities directly under the Central Government into different categories based on their geography as well as the relative level of economic development. It takes the value of 1 for Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan; 2 for Shanxi, Anhui, Jiangxi, Henan, Hubei, and Hunan; 3 for Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang; 4 for Liaoning, Jilin, and Heilongjiang.

Table XII Robustness tests

Panel A Subsample results based on the population of the city								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1) Populous	(2) Less Populous	(3) Populous	(4) Less Populous	(5) Populous	(6) Less Populous	(7) Populous	(8) Less Populous
Pre1978mayor	1.179*** (0.161)	0.091 (0.133)	-26.728*** (6.015)	-12.445*** (2.922)	-3.301* (1.705)	-3.488*** (0.976)	-14.225*** (4.189)	-34.109*** (6.861)
Obs Left	398	254	398	269	27	25	238	143
Obs Right	1,191	1,416	1,193	1,437	1,070	622	1,225	964
Bandwidth	4	4	4	4	4	4	4	4

Panel B Subsample results based on the CEO's age								
	Social contri. to equity ratio		Wage inequality		Foreign assets ratio		Foreign sales ratio	
	(1) Older	(2) Younger	(3) Older	(4) Younger	(5) Older	(6) Younger	(7) Older	(8) Younger
Pre1978mayor	0.261** (0.116)	0.295** (0.137)	-9.743*** (2.882)	-16.987*** (2.681)	-2.898** (1.399)	-6.327** (2.648)	-32.360*** (6.449)	-20.478*** (6.922)
Obs Left	412	272	417	278	39	14	224	158
Obs Right	1,669	766	1,688	775	1,115	414	1,410	618
Bandwidth	4	4	4	4	4	4	4	4

This table reports the robustness test results of the ideological impact on firm policies. In Panels A and B, we conduct the RDD tests similar to that in Tables 8-11 but partition the sample into two subgroups based on whether the firm is located in a populous city measured by above in-sample average population (Panel A), and whether the age of its CEO is above the sample average age (Panel B). The key explanatory variable Pre1978mayor is a dummy variable which takes a value of 1 if the city mayor joined the Chinese Communist Party in/before 1978, and 0 otherwise. Standard errors reported in the parentheses are clustered at the firm level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

The ideology of the CEO and of City CCP Secretary. Another concern is that our results mostly reflect the ideology of corporate CEOs rather than of mayors. Given China's top-down approach in organizing economic and social activities (Huang, 2008; Xu, 2011), we expect that CEOs ideologies are dominated by those of city politicians. Empirically, we do not directly observe the year in which CEOs joined the CCP and therefore cannot classify a CEO's ideology into that of Mao or Deng, as what we did for city mayors. Instead, we proxy a CEO's ideology by her age, under the assumption that an older CEO is more likely to be influenced by Mao. We thus separate the RDD sample based on whether the age of a firm's CEO is above or below the sample average (Panel B of Table XII). Again, we find that the effect of ideology on corporate policies is independent of a CEO's age, indicating that a CEO's own ideology is less important than the local mayor's.

We also check whether our results can be explained by the ideology of the CCP Secretary of the city ("city secretary") instead of the city mayor, by replacing the key explanatory variable in the previous results with a measure of city secretary's ideology. The way we measure city secretary ideology is also based on the age of the secretary upon joining the CCP. In unreported RDD tests, our results are largely similar to those reported in Tables III–IV; however, the coefficients have become smaller. The shrinkage in coefficients may be due to the fact that a city's CCP secretary is mainly responsible for party-related affairs (such as personnel organization and propaganda) and strengthening the Communist Party's leadership in the city, while the mayor is mainly responsible for the city's economic policies and development.

Outliers and falsifications. Furthermore, we conduct several other robustness tests. First, our results still hold after removing from our sample the firms located in Shenzhen, the most important pilot city of Deng's "Reform and Opening-Up" policy. Second, we do not find the statistical significance or the same pattern in our results when we conduct placebo tests on other cutoff years (e.g., 1986, 1987) when no major ideological change occurred. To preserve space, these results are not reported in the paper but are available upon request.

5 Discussions and conclusions

As Piketty (2020) argues, the economy is not a natural fact. Instead, markets, profits, and capital are all historical constructs that depend on choices. The nature of property rights and their distribution is largely driven by prevailing ideology. In this paper, we investigate the impact of politicians' ideology on corporate policies by exploring a unique setting of ideological change in China from Mao to Deng around economic reform in 1978. We find that the discontinuity in indoctrination on people around 18 years old in 1978 who had already joined the Communist Party of China (CCP) or who joined soon thereafter and later became mayors has had a lasting effect on contemporary firm- and

city-level policies. Specially, firms in cities with mayors who joined the CCP under the ideological regime of Mao make more social contributions and have lower within-firm pay inequality and less internationalization. These effects are stronger in firms with political connections, higher government subsidies, lower cost of debt, and lower government ownership and weaker in regions that are less market-oriented or that already had a Communist ideology (i.e., CCP's historical revolutionary base). We also find that some ideology-induced biases in corporate policies seem to persist and affect firm valuation in the long run, although not all. Overall, our results suggest that certain political ideologies can be imprinted on politicians' and corporate executives' decision-making, leading to differences in firm- and economy-level policies and distorted resource allocations.

Our findings have important implications concerning the distortionary effects of ideologies on resource allocation within and across firms and economies. First, with regard to China, many scholars have investigated the institutional factors underlying the country's economy (e.g., Allen, Qian, and Qian, 2005; Song, Storesletten, and Zilibotti, 2011; Bai, Hsieh, and Song, 2019). Others have attempted to understand the driving forces of the systematic differences across different regions in cultures and norms (e.g., Talhelm et al., 2014), including political attitudes (e.g., Cantoni, Chen, Yang, Yuchtman, and Zhang, 2017). Notably, Huang (2008) compares growth paths of the two types of economies in China—the entrepreneurial rural regions and the state-controlled urban regions—and suggests that the development models of these two economies have substantially different welfare implications. Huang (2008) argues that the state-dominated model, which he termed as “capitalism with Chinese characteristics,” did long-lasting damage to the economy and society, resulting in a weak financial sector, income disparity, illiteracy, productivity slowdowns, and reduced personal income growth. Xu (2011) characterizes China's institution as a regionally decentralized authoritarian system in which the central government controls personnel, whereas local governments run the bulk of the economy and initiate implement reforms, policies and rules. We join these discussions by attributing such systematic differences partially to a difference in ideologies that affects local politicians.

Second, and perhaps more broadly, our study illuminates how ideologies can shape not only socioeconomic policies and individual behaviors but also corporate policies. We not only document that ideology matters but also investigate when and how by causally showing its influence on firm policies. As we have shown, ideology as an “invisible hand” substitutes for the “visible hand” of government ownership. These findings are particularly pertinent, given today's anti-globalization sentiments and ideological conflicts around the world. Ideology is often context-specific and only by examining different settings and organizational practices will we develop a full understanding of its role in shaping corporate policies and economic activities over the long term.

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Appendix A Variables definition

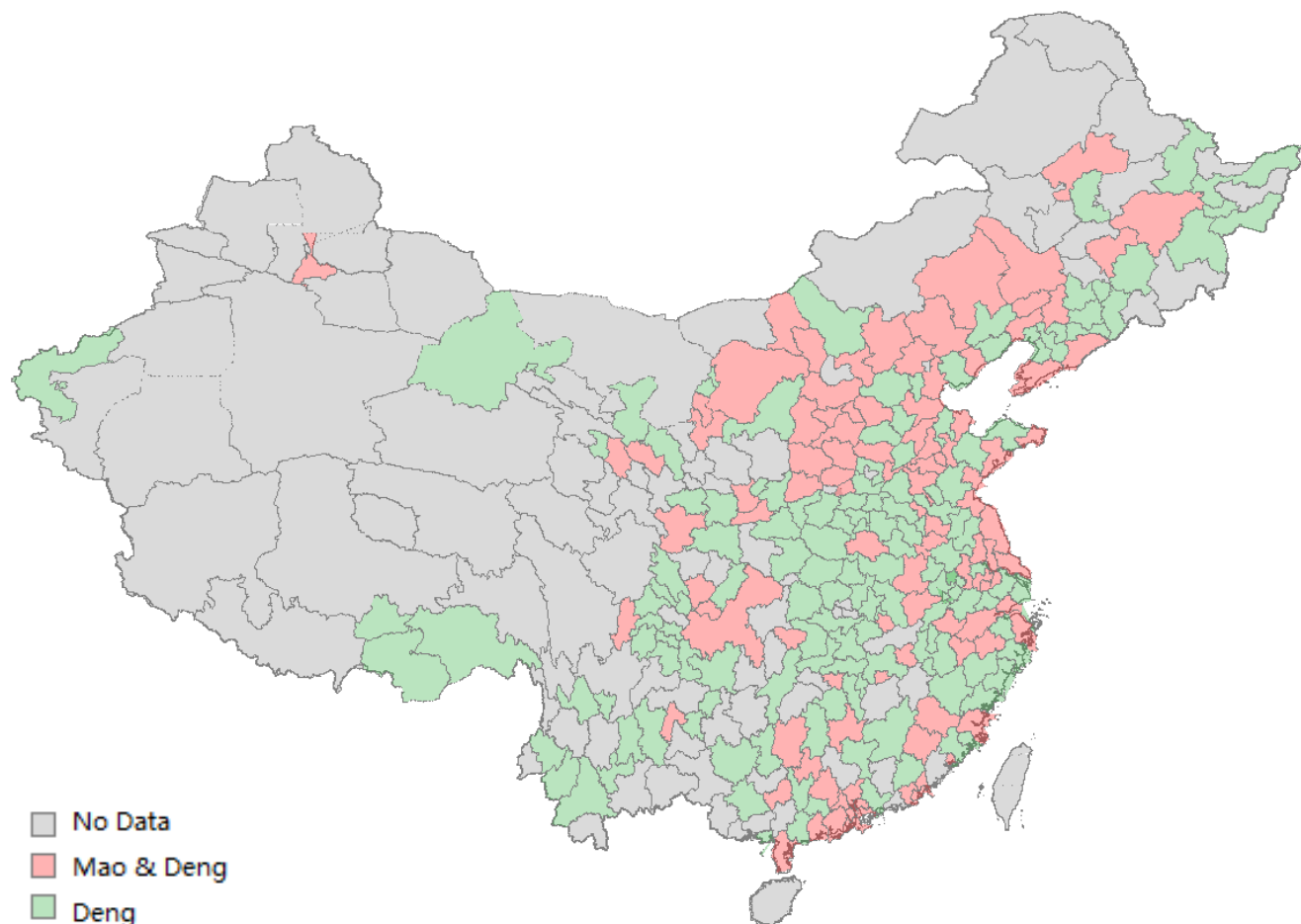
Table A1 Variable definition

Variable name	Description
<i>Dependent variables</i>	
Social contri. to equity ratio	Social contribution (summing up total tax contribution, employee payment, interest expense, and donations) divided by book value of equity.
Wage inequality	The ratio of average top three executives' compensation to the average employee income of a firm.
Foreign assets ratio	The ratio of the assets of the overseas subsidiaries to total assets of the listed firm. The total assets of overseas subsidiaries are weighted by their parent company's ownership in them (%).
Foreign sales ratio	The proportion of foreign sales in a firm's total sales revenue (%).
<i>Other variables</i>	
Pre1978mayor	An indicator variable that equals 1 if the mayor of the city where the listed firm is located joined the Chinese Communist Party before or in 1978, and 0 otherwise.
Gender	An indicator variable that equals 1 if the mayor of the city where the focal listed firm is located is a female, and 0 otherwise.
Race	An indicator variable that equals 1 if the mayor of the city where the listed firm is located belongs to a non-Han ethnic minority, and 0 otherwise.
SOE experience	An indicator variable that equals 1 if the mayor of the city where the listed firm is located has past work experience in state-owned enterprises, and 0 otherwise.
POE experience	An indicator variable that equals 1 if the mayor of the city where the listed firm is located has past work experience in privately-owned enterprises, and 0 otherwise.
Age	The age of the city mayor.
Education	An indicator variable that equals 1 if the mayor of the city where the listed firm is located has a master degree or higher, and 0 otherwise.
Major	An indicator variable that equals 1 if the mayor in the city where the focal listed firm is located majored in a science or technology discipline, and 0 otherwise (e.g., in arts or economics major).
Ideological keyword frequency	<p>Frequency indexes for a set of ideological keywords shown in the People's D: "Chairman Mao (Mao Zhu Xi)", "Class (Jie Ji)", "Imperialism (Di Guo Zhu Yi)", "Solidarity (Tuan Jie)", "Revolution (Ge Ming)", "Reform (Gai Ge)", "Efficiency (Xiao Lv)", "Market (Shi Chang)", "Foreign Capital (Wai Zi)", "Economy (Jing Ji)". For each keyword, we calculate the frequency index using the formula below:</p> $frequency_{it} = \frac{nr. of appearance_{it} \times length_i \times 10000}{total\ nr. of\ words\ on\ People's\ Daily_t}$ <p>where <i>nr. of appearance_{it}</i> is the total number of times a keyword <i>i</i> appears on People's Daily in a given year <i>t</i>; <i>length_i</i> is the total length in words of the keyword <i>i</i>; and <i>total nr. of words on People's Daily_t</i> is the total number of words on the <i>People's Daily</i> in that year. We express this measure as basis point by multiplying the frequency measure by 10,000 for better readability.</p>
Political connection	An indicator variable that equals 1 if the CEO in a given firm and a given year is politically connected (worked in government organization, or shared the same workplace, birthplace, or school with the mayor of the city where her firm is located), and 0 otherwise.
SOE	An indicator variable that equals 1 if a firm's direct controlling shareholder is the government in a given year, and 0 otherwise.

Legal environment high	An indicator variable that equals 1 if a firm is located in a province which has an above-median rating on market intermediary organization development and legal system environmental rating, and 0 otherwise.
Size	The natural logarithm of a firm's total assets.
TobinQ	The ratio of the sum of market value of equity and liability to firm total assets.
Return on assets	The ratio of a firm's net profit to total assets (%).
Return on sales	The ratio of a firm's net profit to its revenue (%).
Total revenue growth	The revenue growth rate of a firm (%).
Leverage	The ratio of debt to book equity of a firm (%).
Total assets growth	The growth rate of a firm's total assets (%).
Government subsidies ratio	The ratio of government subsidies to total assets of a firm (%).
Legal disputes involvement	An indicator variable that equals 1 if a firm is involved in any legal disputes in a given year, and 0 otherwise.
Legal disputes RMB value	The sum of RMB amount involved in all legal disputes for a given firm in a given year.
Increase in social score	An indicator variable that equals 1 if a firm experiences an increase in its relative social score rating in a given year, and 0 otherwise. The relative social score is defined as the proportion of a firm's social score in the total corporate social responsibility score, including the employee, social, and shareholder aspects. The social rating is from the corporate social responsibility ratings provided by Hexun.
<i>City level variables</i>	
City administrative level	An indicator variable that equals 1 if the administrative rank of a city is at the sub-provincial level, equals 2 if at the prefecture level, and equals 3 if at the municipality level.
City GDP per capita	Per capita GDP of a given city in a given year.
Ln(1+ individual labor)	The natural logarithm of the number of individual labors in a given city in a given year.
Ln(1+ total wages)	The natural logarithm of total wages of all employees in a given city in a given year.
Ln(1+foreign inv. amt)	The natural logarithm of the foreign investment amount of a given city in a given year.
Social spending	The ratio of the social security and employment expenditure to GDP of a given city in a given year.
Urban-rural income gap	The difference between CPI-adjusted average per-person urban income and CPI adjusted average per-person rural income.
Employee to population ratio (%)	The ratio of the number of employees to city population in a given year.
Indi. labor to population ratio (%)	The ratio of the number of individual labors to city population in a given year.

Appendix B Distribution of Mao's and Deng's ideologies across Chinese cities

Figure A1 Chinese cities with mayors having different ideologies



This figure plots the distribution of Chinese cities with mayors having different ideologies over our sample period based on whether they joined the CCP before or after 1978. We classify cities into three groups. The first group marked in red includes cities with both mayors influenced by Mao's ideology and mayors influenced by Deng's ideology. The second group marked in green includes cities with only mayors influenced by Deng's ideology. Cities with missing data are marked in grey.

Appendix C The indoctrination process on CCP members

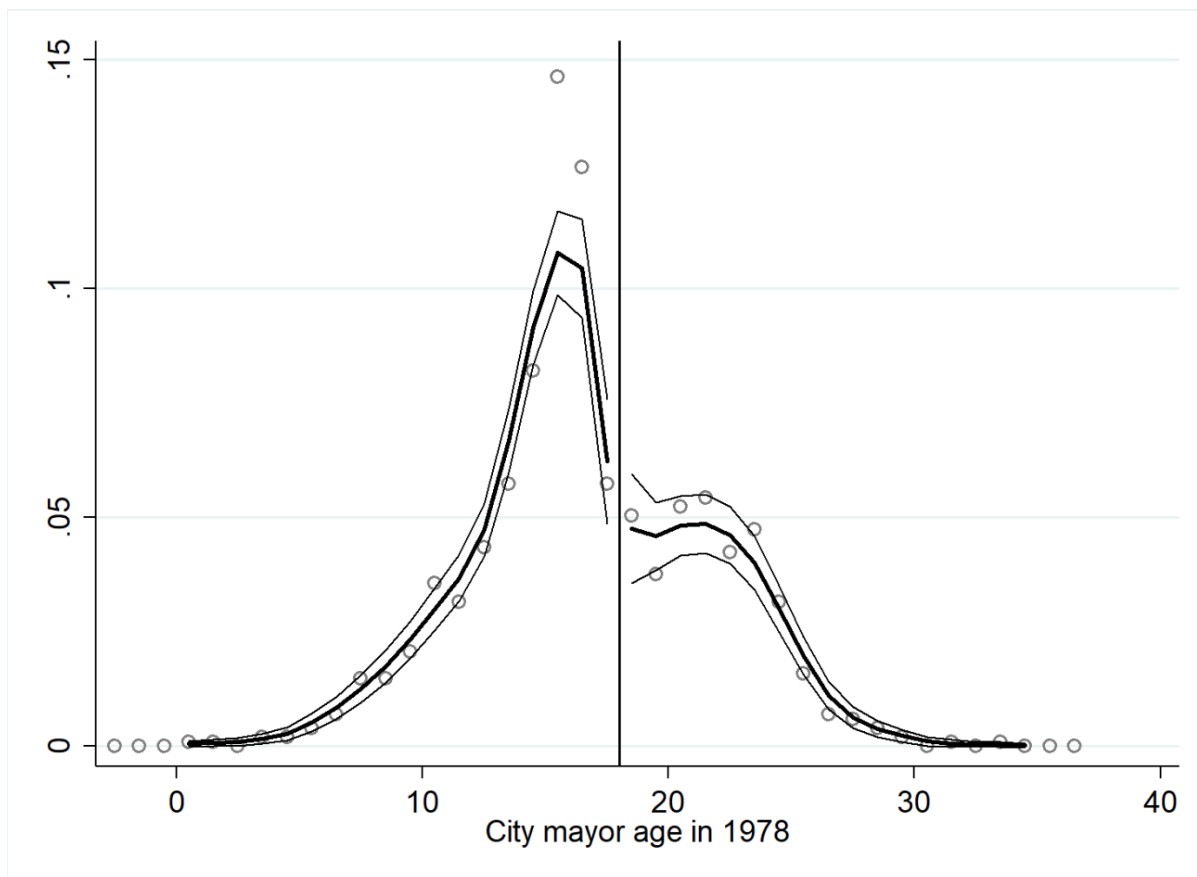
This section describes the indoctrination and ideological imprinting process on China Community Party (CCP) members. Right after joining the CCP, members are required to go through a rigorous indoctrination process over an extended period of time (called a “probation period”) before granting full membership. This process includes attending classes that promote communist beliefs, writing reports expressing their strong and firm belief in communism and opinions on the CCP, attending socialization events with CCP leaders who extol communist principles, and watching documentaries advocating communism (Bian, Shu, and Logan, 2001). After the candidates demonstrate loyalty to the CCP through these activities and oral interviews, they take an oath to devote their lives to the communist cause. Such a selection process has mostly remained stable over the last few decades (Li and Walder, 2001; Shambaugh, 2008).

Through this indoctrination process, the ideologies of CCP were imprinted in its members. However, the sharp change in ideology in China before and after 1978 causes a change in the ideological imprints of those indoctrinated. Prior to 1978, the ideological indoctrination comprised the traditional “Marxist-Leninist doctrine advocating the overthrow of the capitalist system” (Wang, 1999: 206), prioritizing social contributions and equality and against foreign capitalists. After 1978, the ideological indoctrination mostly comprised the importance of economic efficiency, incentives, and opening-up to the world.

To corroborate that there was indeed a sharp change in ideological imprinting around 1978, we conduct a textual analysis by searching keywords in People’s Daily, the official newspaper of the Central Committee of CCP and the key source of education materials during the indoctrination process. We do find that the mentioning of keywords representing Mao’s ideology dramatically declined after 1978 whereas the frequency of keywords representing Deng’s ideology surged. More details on the textual analysis are discussed in Section 3.1.

Appendix D Graphical illustration of McCrary's density test (2008)

Figure A2 Sample smoothness at cut-off point



This figure plots the sample density of city mayors around 18 years old in 1978. We use McCrary's density test (2008) and show that the sample distribution of city mayors is smooth around the discontinuity.

Appendix E Controlling for economic zone-year pair and mayor native place-firm location pair fixed effects

Table A2 Baseline OLS results with additional pair fixed effects

	(1)	(2)	(3)	(4)
	Social contri. to equity ratio	Wage inequality	Foreign assets ratio (%)	Foreign sales ratio (%)
Pre1978mayor	0.012*** (0.004)	-0.588** (0.286)	-0.946*** (0.281)	-1.184* (0.648)
Firm Controls	Y	Y	Y	Y
City Politician Controls	Y	Y	Y	Y
City Macro Controls	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Industry×Year FE	Y	Y	Y	Y
City Admin. Rank×Year FE	Y	Y	Y	Y
<i>Economic Zone×Year FE</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>
<i>Mayor Native Place×Firm Location FE</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>
N	17,072	17,048	7,802	12,845
R2	0.84	0.76	0.81	0.88

This table reports the regression results of the ideological impact on a firm's social contribution (Column (1)), wage inequality (Column (2)), foreign assets ratio (%) (Columns (3)), and foreign sales ratio (%) (Columns (4)). The key explanatory variable Pre1978mayor is a dummy variable which takes a value of 1 if the city mayor joins the Chinese Communist Party in/before 1978, and 0 otherwise. Firm Controls include firm size, ROA, leverage, revenue growth rate and Tobin's Q. City Politician Controls include city mayor's gender, race, education level, and major, and work experience in state-owned or privately owned enterprises. City Macro Controls include a city's GDP per capita, number of individual labor, and total employee wages. In addition, we control for firm fixed effects, year fixed effects, industry-year pair fixed effects, city administrative rank-year pair fixed effects, economic zone-year pair fixed effects, and mayor native place-firm location fixed effects. Standard errors reported in the parentheses are clustered at the city mayor level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1%, respectively. All variable definitions are provided in Appendix A.

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