Regional Studies

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/cres20

A regional perspective on the privatisation of Chinese state-owned firms

Zhe Zhang & Bach Nguyen

To cite this article: Zhe Zhang & Bach Nguyen (20 Sep 2024): A regional perspective on the privatisation of Chinese state-owned firms, Regional Studies, DOI: 10.1080/00343404.2024.2396362

To link to this article: https://doi.org/10.1080/00343404.2024.2396362

REGIONAL STUDIES
https://doi.org/10.1080/00343404.2024.2396362

Routledge Taylor & Francis Group
Regional Studies Association

OPEN ACCESS Check for updates

A regional perspective on the privatisation of Chinese state-owned firms

Zhe Zhang[a,b] and Bach Nguyen[c]

ABSTRACT

This study examines the impact of regional formal and informal institutions and the regional origins of private shareholders on the privatisation efficiency of Chinese state-owned enterprises (SOEs). Using a difference-in-differences method to examine 63,599 firm–year observations, we find that, on average, privatisation enhances the capacity utilisation efficiency of Chinese SOEs. That positive effect is stronger in regions with higher marketisation or more embedded in Confucianism. Interestingly, private shareholders from mainland China enhance capacity utilisation, but foreign shareholders exert no significant effect. Moreover, Hong Kong–Macau–Taiwan shareholders *weaken* the positive effect of privatisation on capacity utilisation in both low-marketised and high-Confucian regions.

KEYWORDS

privatisation; capacity utilisation; marketisation; Confucianism; institutional conflicts; Chinese state-owned firms

JEL D24, P31, R11

HISTORY Received 8 May 2023; in revised form 17 August 2024

1. INTRODUCTION

Institutional theory postulates that organisations exist within broader institutional environments, which include government regulations, cultural norms, industry standards and other external factors (North, 1990; Williamson, 2000), and these environments can influence the behaviour and performance of organisations (e.g., Acemoglu & Johnson, 2005; Moodysson & Zukauskaite, 2014). In the regional science and economic geography literature, institutional theory has been employed to explain why and how regional institutions – the formal and informal institutions associated with subnational regions – have become focal determinants of socio-economic development across regions within a country (Charron et al., 2014; Fritsch & Storey, 2014; Marques & Morgan, 2021; Rodríguez-Pose, 2013). Regional institutions can be broadly classified into (1) *formal* forces, which are explicit, codified and officially recognised structures such as place-based rules and regulations introduced and executed by provincial governments; and (2) *informal* forces, which are unwritten, non-codified and unofficial norms and customs such as Confucian values (Chen et al., 2021), collectivism and individualism (Nguyen, 2021). The formal institutions (Agostino et al., 2020; Roxas & Chadee, 2013) and informal institutions (Nguyen, 2021; Sun et al., 2019) of a region have been identified as important determinants of the behaviour and performance of the region's private businesses.

While regional institutions may have less influence on state-owned enterprises (SOEs), which are typically large and controlled by central government (Du & Mickiewicz, 2016), this may not be the case for *privatising SOEs*. Privatisation – the direct sale of ownership in SOEs to the private sector – reduces the reliance of SOEs on state-funded resources and exposes them to local market mechanisms (Tan et al., 2020). Privatisation might force SOEs to become more responsive to local institutions because they must 'play by the rules of the game', that is, if they are to compete with the local private sector for survival and growth, they need to leverage the local formal and informal institutional forces (Liu et al., 2021). However, it is unclear whether and how regional formal and informal institutions might influence the efficiency of privatising SOEs. Understanding the role that regional institutions play in the privatisation process can help inform the debate about whether privatisation is good or bad for SOEs (Le et al., 2019; Liu et al., 2021; Walheer & He, 2020). We draw on institutional theory to propose that taking

CONTACT Bach Nguyen b.nguyen@exeter.ac.uk
[a] Logistics and E-commerce College, Zhejiang Wanli University, Ningbo, Zhejiang, China
[b] School of Economics, Nankai University School of Economics, Tianjin, China
[c] Innovation, Technology, and Entrepreneurship, University of Exeter Business School, University of Exeter, Exeter, UK

Supplemental data for this article can be accessed online at https://doi.org/10.1080/00343404.2024.2396362

regional institutions into account may help in examining the efficiency of SOEs' privatisation.

To examine the impact of regional institutions on SOEs' privatisation efficiency, we select China as the context. The country is an appropriate empirical setting because China's privatisation campaign was conducted without a clear national legal framework (Zheng, 2019), allowing regional institutional forces to play a significant role in the process. Moreover, China is a geographically large country with substantial heterogeneity in its regional formal and informal institutions (Wang et al., 2021). This variation is ideal for investigating how regional institutions influence SOEs' privatisation. The specific regional institutions we examine are marketisation, a measure of the economic openness and governance efficiency of regional *formal* institutions (Fan et al., 2007), and Confucian values, a set of *informal* ideological, ethical and philosophical systems advocating humanness, righteousness, propriety, wisdom and honesty (Chen et al., 2021). It has been documented that provinces in China differ significantly in terms of their levels of marketisation and Confucian values (Li et al., 2020; Zhou, 2021). This regional institutional heterogeneity might significantly influence the process and, thus, the efficiency of SOEs' privatisation.

Privatisation introduces private shareholders into Chinese SOEs' boards of directors. From the regional geographical perspective, there are three groups of shareholders: (1) mainland China; (2) Hong Kong, Macau and Taiwan (HMT); and (3) foreign countries. Each group adheres to different institutional logics, which are the underlying belief systems or rationalities formed in their specific environments (Lounsbury et al., 2021; Thornton & Ocasio, 2008). Therefore, privatisation may cause institutional conflicts – the execution of opposing institutional logics (Slater & Arugay, 2018; Thornton & Ocasio, 2008) – between state-owned shareholders (who prioritise the fulfilment of government-assigned objectives with privileged treatments) and private shareholders (who prioritise efficiency and profit-maximising). Moreover, these three types of private shareholder have dissimilar capacities, motivations, and levels of cultural distance in relation to Chinese SOEs (Huang et al., 2017; Shi et al., 2020). Private shareholders from mainland China may be more familiar with the institutional logics employed by SOEs but during the 1999–2013 period studied, they are less capable than the other two groups in terms of technology and management. Foreign private shareholders are typically strong in technology and management capability but their institutional logics rarely overlap with those of Chinese SOEs. This implies that private shareholders from HMT have an advantage, given that they are more technologically and managerially advanced than the Chinese SOEs but share their Chinese culture. Mixed evidence (Chen et al., 2011; Lin et al., 2020) means that it is unclear how the respective strengths and weaknesses of the three types of private shareholder may influence privatising SOEs. Thus, this study looks into the origin of private shareholders and examines whether and how their origins might influence the efficiency of privatising SOEs.

Not only must private shareholders deal with institutional conflicts within the privatising SOE, but also they are subject to the institutional forces embedded in the region where the SOE is located. China is a geographically large country with substantial institutional heterogeneity across regions (Wang et al., 2021). Some regions are more deeply embedded in Confucianism or a government-led ecosystem (i.e., lower level of marketisation) than others, and are thus characterised by stronger institutional forces of conservatism and protectionism, respectively. Whether the private shareholders who assume ownership of SOEs in such regions find it difficult to work with the regional institutions or are able to extract benefits from them very much depends on the degree to which their own institutional logics accord with those of the region. Private shareholders from mainland China may be most familiar with conservatism and protectionism; they may be able to leverage these institutional forces to improve the privatising SOE's efficiency. HMT and foreign shareholders may find conservatism and protectionism somewhat alien. Hence, they may be equipped to improve the efficiency of privatising SOEs in regions that have lower Confucianism and higher marketisation. This is an empirical question that requires a systematic analysis.

To examine the roles played by regional institutions on privatising SOEs' efficiency, we employ a difference-in-differences (DID) method and investigate a set of 63,599 observations (18,464 SOEs) in China from 1999 to 2013, a period of mass privatisation (Walheer & He, 2020). Diverging from prior research that explores performance-based outcomes of privatisation (Tan et al., 2020; Zhan & Zhu, 2021), we focus on examining capacity utilisation, which is an indicator of the efficiency of a firm's resource consumption and operation that has been used in recent literature (Aretz & Pope, 2018; José Gahn, 2020; Wang & Zheng, 2022). Examining privatisation efficiency manifests the impacts of local institutions on privatising SOEs better than other examinations of performance (e.g., revenues). This is because the analysis of efficiency examines whether SOEs, when put on a level playing field, can adapt to the local environment and improve their resource *utilisation*. This contrasts with performance-based outcomes, which tend to reflect resource *allocation*: the privileges SOEs enjoy that allow them to perform better (Howell, 2020). Resource allocation cannot fully reflect how SOEs respond to regional institutions during the process of their privatisation.

It is noteworthy that some SOEs will achieve complete privatisation while others will be partially privatised. In the main analysis, we focus on the latter to see whether privatisation, even if only partial, exerts an effect on firm capacity utilisation. We validate the reliability of the conclusions generated by the DID method by constructing an instrumental variable approach. We also conduct a set of robustness checks: use of an alternative measure of efficiency, propensity-score matching, placebo testing, long-term effect testing, alternative measures of regional institutions, additional control variables, a test of complete privatisation, and an exploration of the effects related to different waves of privatisation reforms and market structure.

This study makes three contributions to the literature. First, it proposes a theoretical framework to examine the importance of regional institutions in SOEs' privatisation. Prior research debates the necessity for privatisation, with some authors arguing that SOEs perform better than private firms (e.g., Le et al., 2019; Belloc, 2014), rendering privatisation unnecessary, while others argue the opposite (e.g., Tan et al., 2020; Zhan & Zhu, 2021). We contribute to this conversation by taking into account the role played by regional institutions. Employing the institutional conflict perspective (derived from the institutional theory), we offer new understanding of how shareholders' specific institutional logics may cause them to face difficulties or allow them to extract benefits from regional institutions when they take over ownership of privatising SOEs. Our findings reveal that the positive effect of privatisation is stronger in regions that have higher levels of marketisation or are more deeply embedded in Confucianism. These findings also add to the regional literature by showing that regional institutions are essential to understanding how the efficiency of SOEs' privatisation may vary across regions within a country.

Second, this study adds a new dimension to the literature on institutional conflicts in SOEs' privatisation: private shareholder origin. Private shareholders from (1) mainland China, (2) HMT or (3) foreign countries have different (levels of) institutional logics to the Chinese SOEs. By examining the potential institutional conflicts resulting from the origins of private shareholders, this study begins a conversation about how the origins of shareholders from different regions may contribute to the efficiency of privatising SOEs. Specifically, our findings reveal that having private shareholders from mainland China contributes significantly to the capacity utilisation of privatising SOEs. However, HMT and foreign shareholders, on average, exert no significant effect.

Third, this study expands the literature on regional institutions in relation to SOEs' privatisation by examining the origins of private shareholders while also taking into account the regional institutions embedded in the locations of privatising SOEs. This research setting allows us to explore more deeply the potential conflicts between the institutional logics employed by private shareholders and those associated with the regional institutions embedded in SOEs' locations. Interestingly, our findings show that HMT shareholders may weaken the positive effect of privatisation on SOEs' capacity utilisation if the privatising SOEs are in regions that have a low level of marketisation or are highly embedded in Confucianism. Meanwhile, mainland China shareholders may strengthen the positive effect of privatisation on SOEs' capacity utilisation if the privatising SOEs are in regions with a high level of marketisation. Finally, foreign shareholders do not exert significantly different impact on SOEs' capacity utilisation across China's regions.

The rest of the paper is structured as follows. The next section briefly reviews the literature on SOEs' privatisation. Section 3 elaborates on the role played by regional marketisation, regional Confucian values and the regional origins of private ownership in the privatisation of Chinese SOEs. Section 4 presents the data and methods in use. Section 5 reports the findings and robustness tests. Finally, the last two sections discuss and conclude the study.

2. IS PRIVATISATION GOOD OR BAD?

The general assumption is that privatisation stimulates improvements. This is because theory expects SOEs to perform *worse* than their private counterparts. Hu (2005) has documented four key explanations for why privatisation may enhance SOEs' efficiency and performance. First, privatisation reduces agency problems. The privatisation process enhances managers' direct stakes in the firms (e.g., bonus and ownership), incentivising them to run the businesses efficiently (Chen et al., 2016; Feng & Johansson, 2018). Second, privatisation reduces bureaucracy and enhances firms' competitive advantages thanks to efficient resource utilisation (Le et al., 2019; Walheer & He, 2020). Third, privatisation frees firms from a preset salary scale regulated by the government, leading to enhanced human resource quality and labour productivity (Lardy, 1998; Li et al., 2014). Finally, privatisation minimises the social and political objectives associated with state ownership, which could be a burden that restricts SOEs from pursuing pure economic performance (Yang et al., 2023).

However, another strand of the literature proposes that SOEs may perform better than their private counterparts, implying that privatisation is unnecessary or even counterproductive. Belloc (2014) has argued that SOEs may be more inclined to participate in collaborative efforts between (state-owned) firms, such as patent-sharing and cross-licensing, to foster innovation and enhance efficiency. This inclination is attributed to the fact that SOEs are predominantly under the control of the state, which allows for more centralised decision making. Additionally, the state's access to comprehensive economic data positions it to spot trends and facilitate more efficient inter-firm and inter-industry knowledge-exchange systems (Le et al., 2019). Also, SOEs have an advantage in innovation because, unlike private companies, they are not driven by profit. They can thus handle the uncertainty and risk involved in innovation; private firms, which are focused on profits, tend to avoid uncertain and high-risk activities (e.g., research phases) (Walheer & He, 2020). The longer investment horizon of SOEs makes them more willing to engage in high-risk innovative projects, leading to better long-term performance. Their non-prioritisation of profits equips them to absorb risks and losses when executing government-assigned objectives (Walheer & He, 2020), which gives them a competitive edge. Taken together, SOEs' extended investment horizon and stronger loss-affordance makes them more receptive to undertaking higher risk activities that potentially promise better financial returns. Finally, SOEs typically have more access to policy information, which allows them to identify and realise untapped business opportunities, leading to better and more sustainable development (Tkachenko et al., 2017). If these arguments are true, then privatisation is unnecessary.

Interestingly, the empirical literature is also mixed. While some research shows that state ownership has a positive effect on firm performance (Choi et al., 2011; Le et al., 2019; Wu & Xu, 2021), other scholars demonstrate the opposite (Du et al., 2014; Fang et al., 2020; Yu & Nijkamp, 2009). We argue that the mixed findings could be attributed, at least to some extent, to the heterogeneous regional institutions. This is because China is a large country and each region has a distinct level of marketisation and Confucianism, creating dissimilar regional institutional settings (Li et al., 2020; Chen et al., 2021). This variation in regional institutions exerts dissimilar impacts on the performance of the local business sector, which might explain the contradictory findings in the extant literature. The next section discusses these regional institutional forces in detail.

3. REGIONAL INSTITUTIONS AND PRIVATISATION

3.1. Marketisation and privatising SOEs' capacity utilisation

Marketisation is defined as the promotion of a market economy and the expansion of the market-based principle into areas traditionally controlled by the state (Yu & Deng, 2021). It is the most comprehensive measure of the economic openness and governance efficiency of regional formal institutions (Bin et al., 2020; Du & Luo, 2016). The construct was created and updated by Fan et al. (2007) and Wang et al. (2017), and it has been published by the China National Economic Research Institute (NERI). The measure takes into account the interaction between government and the market, the rise of the non-state sector, the evolution of the product market, the development of the factor market and intermediaries, and the changes in the local legal system to support a market-based business environment.

A high level of marketisation brings about several benefits for local business community. Specifically, it helps to reduce transaction costs and frictions, weakening the importance of political connections and corruption (Du & Luo, 2016) and facilitating market-based business practices (Hou et al., 2021). However, it is unclear whether and in which direction a region's marketisation plays a role in determining the capacity utilisation of privatising SOEs. On the upside, a high level of marketisation provides business organisations, including SOEs, with a conducive set of institutional settings, such as supportive regulations and efficient governance systems (Yang et al., 2020; Yu & Deng, 2021). These institutional forces help improve the efficiency of privatising SOEs. For example, the private shareholders who assume ownership of privatising SOEs in regions with higher levels of marketisation may be able to leverage the functioning local markets and the efficiency of local governance systems to reduce transaction costs and frictions in the takeover process. Moreover, thanks to the strengthened property-rights protection afforded by a high level of marketisation, private shareholders may be more willing to spill over advanced technologies to privatising SOEs (Zeng et al., 2021), thereby improving their capacity utilisation.

However, on the downside, the set of institutional logics embedded in a high level of marketisation may conflict with the set of institutional logics employed by SOEs. Specifically, a high level of marketisation promotes market-based business practices and regulations aimed at reducing transaction costs. However, SOEs typically pursue institutional logics of non-profit-maximising, non-market-based operations and rent-seeking (Li et al., 2014). This incongruency between SOE's internal (state-owned) nature and the external market-based institutions inevitably causes institutional conflicts. For example, managers of privatising SOEs may find that the arm's-length transactions promoted by a high level of marketisation go against their conventional approach to doing business, in which network-based transactions are utilised to extract rents. Since marketisation logics are likely promoted by private shareholders, privatising SOEs inevitably face institutional conflicts. These conflicts create frictions because SOEs' managers must adhere to marketisation logics while also striving to maintain the old institutional logics of SOEs, resulting in reduced capacity utilisation.

Given that a high level of regional marketisation brings about both institutional support and conflicts, we thus propose the following research question:

RQ1: How do regional degrees of marketisation influence Chinese SOEs' privatisation efficiency?

3.2. Confucian values and privatising SOEs' capacity utilisation

In the absence of a homogenous and consistent formal legal system, China's deep-rooted cultural values, such as Confucianism, play an essential role in guiding economic behaviours (Xie et al., 2023). Confucianism describes the set of ideological, ethical, and philosophical systems that are the foundation for social interactions and economic practices in China (Zhou, 2021) and which have been widely recognised as forming the core of Chinese culture (Chen et al., 2021). Specifically, Confucius advocates humanness, righteousness, propriety, wisdom, and honesty. These values are the standard ethics that Chinese people 'use every day but do not know' (Xie et al., 2023). It is noteworthy that the basic values of Confucianism have not been changed by the Communist ideology; rather, they are being propagated by the government as an important pillar of Chinese culture to build collectivism in the new era of political and economic reforms (Chen et al., 2019).

Although Confucian values are deeply embedded in Chinese society, the degree to which each region is affected by them is significantly different due to historical trajectories, the country's diversified regional ethnicity and its large geographical nature (Zhou, 2021). Moreover, the impact of Confucianism on business performance is much debated, with one strand of research arguing that in regions where Confucian values are popular, people are keen on signalling moderatism, honesty, loyalty and mutual trust (Li et al., 2020; Tang et al., 2022). As such, Confucian values contribute to local economic development because they facilitate generalised trust, reducing transaction costs. Empirically, it has been found that Confucianism boosts local firms' research and development (R&D) activities (Yan et al., 2021), investment efficiency (Chen et al., 2019), performance (Chen et al., 2021), access to trade credit (Li et al., 2020) and a reduction in corporate fraud (Tang et al., 2022). Following this strand of research, Confucianism may help enhance the capacity utilisation of privatising SOE because when SOEs' managers live by values such as moderatism, honesty and mutual trust, they are more likely to take into account the new institutional logics associated with the private shareholders. In other words, Confucianism may help alleviate potential conflicts between an old set of institutional logics pursued by SOEs and the new set of institutional logics introduced by private shareholders. In this situation, private shareholders may enjoy a smoother transaction and the privatising SOEs may go through a more efficient transition, leading to improved capacity utilisation.

However, another strand of literature contends that certain values derived from Confucianism, such as risk avoidance and the importance of hierarchy, are backwards-looking, custom-based and non-scientific (Jin et al., 2023). These values can dampen communication efficiency, suppress personal development and accountability, and discourage corporate risk-taking (Xie et al., 2023; Zhou, 2021). Empirically, it has been found that firms exposed to stronger regional Confucianism pay their executives and employees less (Jin et al., 2023; Xie et al., 2023), which might lead to increased rent-seeking behaviours and reduced efficiency (Feng & Johansson, 2018). From this perspective, Confucianism may negatively influence privatising SOEs' capacity utilisation. This is because when the managers of privatising SOEs are embedded in values such as risk and responsibility avoidance, and the prioritisation of hierarchy and old customs, they may find it difficult to follow the new set of institutional logics introduced by private shareholders. They may be unwilling or unable to execute the private shareholders' changes geared to improving efficiency and maximising profit. Therefore a high level of Confucianism may introduce frictions to the process of privatisation and weaken the impacts of private shareholders on privatising SOEs, leading to reduced capacity utilisation.

Given these conflicting research strands, it is unclear whether and in which direction regional Confucian values might influence the capacity utilisation of privatising SOEs. Therefore, we propose the next research question:

RQ2: How do regional Confucian values influence Chinese SOEs' privatisation efficiency?

3.3. The origins of the private shareholders

When SOEs privatise, they can sell ownership to shareholders from mainland China, the HMT regions or foreign countries. Each type of shareholder has distinct institutional logics, capabilities and motivations. Specifically, HMT-owned businesses in China are mainly export-driven and focus more on labour-intensive industries (Shi et al., 2020). Foreign-owned firms tend to come with state-of-the-art technology and an eagerness to invest in R&D activities (Huang et al., 2017). Mainland private businesses typically have family-centric ownership and, compared with the other two, management and technological constraints (during the study period of 1993–2003) (Du & Mickiewicz, 2016). The differences in the business models of the three groups of shareholders indicate that they may face dissimilar challenges when taking over ownership from privatising SOEs.

Moreover, the shareholders' cultural distance from Chinese SOEs may also be relevant to the efficiency of the privatising SOE. Private shareholders from mainland China have a set of institutional logics that is distinct from that of the SOEs, but these shareholders are still relatively familiar with how SOEs operate. The fact that they share the SOEs' formal institutional framework (i.e., the national laws and constitution) may mean they find it easier than the shareholders from HMT and foreign countries to collaborate with SOEs. In similar vein, the social and historical ties between the HMT regions and mainland China may mean that HMT shareholders enjoy several advantages over foreign shareholders, such as cultural and geographical proximity, and the same languages and ethnic Chinese networks (Ding et al., 2016; Shi et al., 2020).

The heterogeneity associated with private shareholders' origins may play an essential role in determining privatising SOEs' capacity utilisation. From the technology and management capability perspective, it is arguable that shareholders from foreign countries may help significantly improve the capacity utilisation of privatising SOEs, while HMT shareholders are likely to contribute less, and those from China mainland may, in the study period (1999–2013), contribute less again. However, the cultural distance perspective implies that mainland shareholders, relative to the other two types of shareholders, might face fewer institutional conflicts with privatising SOEs. From this perspective, foreign shareholders may find that their institutional logics are alien to Chinese SOEs (Cai et al., 2016), while HMT shareholders once again take middle place.

In essence, the origins of shareholders may exert opposing impacts on the efficiency of privatisation. However, the direction of these impacts is unclear due to the trade-offs between shareholders' capacity and cultural distance. Therefore, we propose the next research question:

RQ3: How do the origins of shareholders (mainland China, HMT regions, and foreign countries) influence Chinese SOEs' privatisation efficiency?

Furthermore, private shareholders not only face institutional conflicts with privatising SOEs per se, but also they must deal with the institutional forces embedded in the regions in which the SOEs are located. In terms of *marketisation*, foreign shareholders, relative to HMT and local shareholders, may find it easier to take over ownership from privatising SOEs located in regions with a high level of marketisation. This is because a high level of marketisation promotes institutional logics similar to those employed by foreign shareholders, such as property-rights protection, arm's-length and market-based business practices with few resources paid out in corruption, and efficient governance systems from local governments. In other words, a high level of marketisation in the privatising SOE's business environment helps reduce potential institutional conflicts between foreign shareholders and the environment. Mainland shareholders, on the other hand, are used to conducting businesses under the old institutional logics. Du and Mickiewicz (2016) show that Chinese private businesses must learn how to survive and grow in the new complex, corruptive and changing institutional environment of China. Therefore, compared with foreign shareholders, they may be less sensitive to the levels of regional marketisation. HMT shareholders, with their hybrid identity, may appreciate a high level of regional marketisation more than mainland shareholders; however, since their culture, languages and ethnic networks are similar to those of the mainland, they may be less sensitive to marketisation than foreign shareholders, who are completely new to the Chinese 'rules of the games' (Ding et al., 2016).

Regarding *Confucianism*, mainland private shareholders may benefit from taking over ownership from privatising SOEs located in regions with a high level of Confucianism because they are, to some extent, also embedded in Confucian values. Sharing similar ideologies and philosophical systems can lay the foundation for functioning social interactions and economic practices. Foreign shareholders may find Confucianism to be alien, and some Confucian values such as risk avoidance and the importance of hierarchy are attitudes that may seem backwards-looking. The mismatch between the two institutional logics will inevitably lead to conflict, which requires resources to resolve. Hence, foreign shareholders may not help improve privatising SOEs' capacity utilisation as much as mainland private shareholders can. Here again, it might be supposed that HMT shareholders, thanks to their hybrid identity and their cultural overlap with the mainland, will occupy the middle group. But actually, findings related to the contributions of HMT-owned businesses to the mainland is mixed. Some research shows that investments from HMT regions improve local private firms' productivity (Lin et al., 2020) and local environmental outcomes since these investors exhibit a stronger sense of citizenship due to their closer ties with mainland China (Huang et al., 2017). Others find that HMT investment, relative to foreign investment, delivers lower technology spillover (Shi et al., 2020), drives down wage levels in local firms (Chen et al., 2011) and tends to pollute the environment more (Ding et al., 2016).

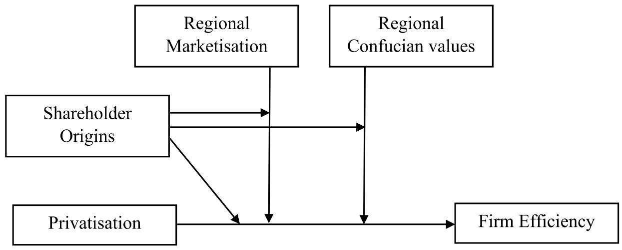

Figure 1. Analytical framework.
Note: RQ1 examines the moderating effect of regional marketisation on the relationship between privatisation and firm efficiency; RQ2 examines the moderating effect of regional Confucian values on the relationship between privatisation and firm efficiency; RQ3 examines the moderating effect of shareholders' origins on the relationship between privatisation and firm efficiency; and RQ4 examines how the moderating effect of shareholders' origins varies by degrees of regional marketisation and Confucian values.

All in all, it may be seen that once regional institutional forces are taken into account, the privatisation of SOE's is not simply an efficiency-enhancing process; it is also a process in which different institutional forces interact, give mutual support, and cause and resolve conflicts. The next section uses these interaction forces to examine privatisation empirically.

RQ4: How do the effects of shareholders' origins on Chinese SOEs' privatisation efficiency vary by (1) regional degrees of marketisation and (2) regional Confucian values?

Figure 1 summarises the analytical framework built upon the four proposed research questions.

4. DATA AND METHODS

4.1. Data

The firm-level data used in this paper are from the Chinese Industrial Enterprises Dataset constructed by National Bureau of Statistics of China. The study window is 1999–2013, which covers China's period of mass privatisation (Walheer & He, 2020). This database contains all the state- and non-state-owned industrial enterprises in China that have annual sale revenues of more than 5 million RMB. It provides basic statistics (e.g., enterprise name, location and industry code) as well as financial indicators (such as information on paid-in capital, total assets, fixed assets, total liabilities and industrial value added).

To clean the data, we exclude the following observations: (1) those with missing key indicators or key indicators with values less than zero; and (2) those that clearly do not comply with accounting principles, such as where the total assets are less than the net fixed assets, or the accumulated depreciation is less than current depreciation. Finally, to identify accurately the causal effects of the introduction of non-state ownership to SOEs, we define firms with 100% state-owned capital as SOEs. We exclude all enterprises that are completely privately owned. This cleaning process leaves 63,599 firm–year observations for 15,884 SOEs.

4.2. Variables

4.2.1. Dependent variable

To assess the efficiency of SOEs' privatisation, we use capacity utilisation (CU) as a measure. To calculate CU, we employ stochastic frontier analysis (SFA) (Battese & Coelli, 1995). Compared with other methods (e.g., cost function method, peak value method and data envelopment analysis method), SFA is more advanced in the sense that it takes into consideration the elasticity of substitution of different production components. Moreover, the production frontier for measuring potential output is stochastic, which is both realistic and reliable (Lu & Li, 2022). A higher value of CU indicates better capacity utilisation. Appendix A in the supplemental data online presents the measurement process of CU in detail.

4.2.2. Core independent variable

The core independent variable in this paper is the dummy variable DD_{it}, which indicates whether a pure SOE i in year t has taken on privatisation reform. Specifically, this dummy variable equals 1 in the years after the SOE introduced other shareholders; and 0 otherwise. In other words, if a sampled SOE i with 100% state-owned capital introduced private capital (from mainland China and/or HMT, and/or foreign countries) in year t, we define this SOE as having begun to engage in privatisation, in which case DD_{it} is set as 1 in year t and for all years thereafter; otherwise, it is set as 0.

4.2.3 . Regional marketisation

In this study, we adopt the NERI marketisation index as a proxy for the development of China's regional formal institutions at the provincial level. The marketisation index consists of 25 indicators related to five aspects of marketisation: the government-market relationship, the development of the non-state economy, the degree of development of product markets, the degree of development of the factor markets and the intermediary markets, and the legal system environment (Fan et al., 2007). The higher the marketisation index scores, the greater the development of local formal institutions.

4.2.4. Regional Confucianism

Following prior literature (Chen et al., 2021), we use the number of Confucian temples in the prefecture-level cities where the sampled firms are located to capture the embeddedness of Confucian values in local informal institutions. The data on Confucian temples are taken from the Chinese Research Data Service (CNRDS). This measurement is premised on the reasoning that it is likely that stronger Confucianism provokes the establishment of more Confucian temples, which in turn promotes the development of Confucian values.

4.2.5. The origin of private ownership

We create a set of variables to indicate the origin of private ownership. Since an SOE may attract combinations of the three private shareholders (mainland, HMT and foreign), we need to pick the one that is dominant and in charge of the firm's governance. Thus, mainland ownership is a dummy variable which takes a value of 1 when the proportion of shares from mainland China accounts for no less than 50% of the total shares in a year. Similarly, HMT ownership takes a value of 1 when the proportion of shares from HMT accounts for no less than 50% of the total shares in a year. The operationalisation is repeated for the foreign ownership dummy variable.

4.2.6. Control variables

In order to control as much as possible for the impact of differences in firm characteristics on the estimation results, we include the following control variables based on the existing literature (Liu et al., 2021; Lu & Li, 2022): firm size (by assets), firm age (years), leverage (total debts over total assets), profitability (profits over sale values), province-owned (province-owned = 1, central-owned = 0) and industry switch (if SOEs changed industry = 1, 0 otherwise). The definitions and descriptive statistics of the variables are shown in Table 1. Pairwise correlations are shown in Appendix B in the supplemental data online.

4.3. Empirical model and estimation

Since the SOEs did not undergo privatisation at the same time, this study refers to the approach of Beck et al. (2010) and adopts the multi-period DID model for estimation:

$$CU = a_1 + \eta 1 DD_{it} + \gamma Z_{it} + u_i + \tau_t + \varepsilon_{it} \qquad (1)$$

where u_i is the firm-level fixed effect, τ_t is the time fixed effect, Z_{it} is a set of control variables, and ε_{it} is the error term. The variable of interest is DD_{it}. The coefficient, η_1 therefore reflects the impact of privatisation on SOEs' capacity utilisation. To examine the impacts of regional marketisation and Confucianism, we follow Cai et al. (2016) in our construction of the difference-in-difference-in-differences (DDD) estimations:

$$\begin{aligned} CU = a_2 + \eta_2(DD_{it} \times \mathit{Origin\ of\ private\ ownership}_{it}) \\ + \gamma Z_{it} + u_i + \tau_t + \varepsilon_{it} \end{aligned} \qquad (2)$$

$$\begin{aligned} CU = a_3 + \eta_3(DD_{it} \times \mathit{Confucianism}_{it}) + \gamma Z_{it} + u_i \\ + \tau_t + \varepsilon_{it} \end{aligned} \qquad (3)$$

$$\begin{aligned} CU = a_4 + \eta_4(DD_{it} \times \mathit{Marketisation}_{it}) + \gamma Z_{it} + u_i \\ + \tau_t + \varepsilon_{it} \end{aligned} \qquad (4)$$

5. RESULTS

5.1. Benchmark regressions

The estimation results are reported in columns 1 and 2 of Table 2. The coefficients on DD are consistently positive

Table 1. Descriptive statistics.

Variable	Definition	Mean	SD	Minimum	Maximum
CU (Capacity utilisation)	A measure of the capacity utilisation rate of a company. The higher the value, the higher the utilisation of the company's equipment and the lower the idle capacity. For the calculation of this variable, see Appendix A in the supplemental data online	0.6688	0.2491	0.0455	0.9941
DD (Privatisation)	Dummy variable = 1 in the years after SOEs introduced other shareholders; and 0 otherwise	0.1869	0.3898	0.0000	1.0000
Mainland ownership	Dummy variable set = 1 when an SOE has introduced private shareholders from mainland China and the mainland shareholders' capital accounts for no less than 50% of the total capital; and 0 otherwise	0.0584	0.2345	0.0000	1.0000
HAT ownership	Dummy variable set = 1 when an SOE has introduced private shareholders from Hong Kong, Macau and Taiwan (HMT) and the HMT shareholders' capital accounts for no less than 50% of the total capital; and 0 otherwise	0.0021	0.0456	0.0000	1.0000
Foreign ownership	Dummy variable set = 1 when an SOE has introduced foreign shareholders from outside China and the foreign shareholders' capital accounts for no less than 50% of the total capital; and 0 otherwise	0.0029	0.0536	0.0000	1.0000
Regional marketisation	Indicates China's formal institutions at the provincial level; the higher the scores, the greater formal institutions development	5.4578	1.6442	2.9400	11.7100
Regional Confucianism	Logarithm of the number of Confucian temples +1 in the city where the SOE is located	2.5098	1.1270	0.0000	4.3944
Firm size	Logarithm of total assets	11.1626	1.6461	2.8904	19.2767
Firm age	Logarithm of the difference between the current year and the year in which the firm was founded	3.2995	0.8998	0.0000	5.8260
Leverage	Total debt over total assets	0.7441	0.3879	−0.3761	16.2530
Profitability	Operating profit over industrial sales revenue	−0.0581	0.4674	−13.0000	0.9085
Province-owned	Dummy variable = 1 if the firm is oversighted by provincial or central government; and 0 otherwise	0.3178	0.4656	0.0000	1.0000
Industry switch	Dummy variable = 1 an SOE changed its industry; and 0 otherwise	0.2965	0.4608	0.0000	1.0000

Note: SOE, state-owned enterprise.

and statistically significant, indicating that SOEs' capacity utilisation has significantly improved following privatisation. The DDD estimation results are reported in columns 3–7 of Table 2. The coefficients on *DD* × *Confucianism* and *DD* × *marketisation* are positive and statistically significant, indicating that the improvement in capacity utilisation is greater for SOEs located in regions that are embedded deeper in Confucianism or which have more developed marketisation institutions.

Meanwhile, the coefficient on *DD* × *Mainland ownership* is significantly positive, suggesting that the increase in capacity utilisation of SOEs is strengthened when mainland private shareholders are introduced and dominate the SOEs' other (HAT and foreign) private shareholders. The coefficients on *DD* × *HMT ownership* and *DD* × *Foreign ownership* are both statistically insignificant, implying that the capacity utilisation of privatising SOEs does not change significantly when HMT or foreign shareholders are dominant.

5.2. The role of regional marketisation and Confucianism

Regions with a marketisation index above the 75th percentile are classified as high marketisation, and the remainder are classified as low marketisation. In Table 3, the coefficient on *DD* × *Mainland ownership* is significantly positive in column 1 and not significant in column 2. This indicates that introducing private shareholders from mainland China and shifting the control of SOEs to these shareholders leads to significant improvements in the utilisation of production capacity only when the level of marketisation is high. Meanwhile, the coefficient on *DD* × *HMT ownership* in column 3 is statistically significant but negative and significantly significant in

Table 2. Benchmark specifications.

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
DD (privatisation)	0.0208***	0.0175***					
	(7.954)	(6.558)					
DD × Confucianism			0.0074**				
			(2.321)				
DD × Marketisation				0.0094***			
				(3.356)			
DD × Mainland ownership					0.0286***		
					(5.522)		
DD × HMT ownership						−0.0424	
						(−1.309)	
DD × Foreign ownership							−0.0027
							(−0.125)
Firm size		0.0036*	0.0038**	0.0038**	0.0039**	0.0039**	0.0039**
		(1.953)	(2.045)	(2.065)	(2.106)	(2.112)	(2.121)
Firm age		−0.0041***	−0.0047***	−0.0045***	−0.0044***	−0.0049***	−0.0049***
		(−2.869)	(−3.337)	(−3.205)	(−3.126)	(−3.458)	(−3.434)
Leverage		−0.0295***	−0.0354***	−0.0353***	−0.0352***	−0.0356***	−0.0356***
		(−6.920)	(−8.179)	(−8.155)	(−8.141)	(−8.216)	(−8.212)
Profitability		0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
		(0.830)	(0.839)	(0.838)	(0.839)	(0.843)	(0.842)
Industry switch		−0.0037	−0.0001	−0.0001	0.0001	−0.0002	−0.0002
		(−1.443)	(−0.042)	(−0.048)	(0.023)	(−0.065)	(−0.056)
Province-owned		0.0019	−0.0003	−0.0002	0.0005	−0.0003	−0.0004
		(0.446)	(−0.064)	(−0.036)	(0.109)	(−0.070)	(−0.089)
Constant	0.6708***	0.6346***	0.6726***	0.6710***	0.6700***	0.6728***	0.6725***
	(876.319)	(22.430)	(31.381)	(31.315)	(31.284)	(31.370)	(31.353)
Observations	63,599	63,599	52,121	59,425	63,599	63,599	63,599
R^2	0.721	0.731	0.735	0.731	0.725	0.731	0.732

Note: The estimator is firm-level fixed effect. The dependent variable is capacity utilisation. A set of year dummies is included in all specifications. Robust t-statistics are shown in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table 3. Regional marketisation.

Variables	**(1) High marketisation**	**(2) Low marketisation**	**(3) High marketisation**	**(4) Low marketisation**	**(5) High marketisation**	**(6) Low marketisation**
DD × Mainland ownership	0.0343***	0.0089				
	(5.660)	(0.790)				
DD × HMT ownership			0.0024	−0.1120**		
			(0.058)	(−2.121)		
DD × Foreign ownership					0.0054	−0.0707
					(0.204)	(−1.589)
Firm size	0.0071***	−0.0072*	0.0070***	−0.0079**	−0.0072*	0.0070***
	(2.914)	(−1.918)	(2.884)	(−2.159)	(−1.919)	(2.878)
Firm age	−0.0034*	0.0001	−0.0040**	−0.0001	−0.0001	−0.0040**
	(−1.824)	(0.012)	(−2.118)	(−0.021)	(−0.029)	(−2.112)
Leverage	−0.0297***	−0.0262***	−0.0301***	−0.0212***	−0.0262***	−0.0301***
	(−5.703)	(−3.470)	(−5.768)	(−2.974)	(−3.460)	(−5.767)
Profitability	0.0003***	0.0028***	0.0003***	0.0486***	0.0028***	0.0003***
	(6.550)	(2.900)	(6.484)	(7.650)	(2.900)	(6.483)
Industry switch	0.0013	−0.0052	0.0008	−0.0057	−0.0053	0.0008
	(0.406)	(−0.834)	(0.248)	(−0.925)	(−0.858)	(0.248)
Province-owned	0.0055	0.0007	0.0043	0.0017	0.0007	0.0044
	(0.962)	(0.080)	(0.766)	(0.194)	(0.086)	(0.772)
Constant	0.6756***	0.7276***	0.6806***	0.7348***	0.7281***	0.6807***
	(23.664)	(17.086)	(23.792)	(17.814)	(17.083)	(23.799)
Observations	14,580	44,845	14,580	44,845	14,580	44,845
R^2	0.766	0.761	0.769	0.773	0.761	0.765

Note: The estimator is firm-level fixed effect. The dependent variable is capacity utilisation. A set of year dummies is included in all specifications. Robust *t*-statistics are shown in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

column 4. This suggests that when shareholders from HMT encounter a relatively imperfect market system, they show a lack of adaptation; that is, in the low marketisation group, the capacity utilisation of SOEs is lower when HMT shareholders dominate than when other shareholders do so. Finally, the coefficient on *DD* × *Foreign ownership* is insignificant in columns 5 and 6.

Next, we examine the role played by Confucianism. For this, regions with Confucian temple numbers above the 75th percentile are categorised as high Confucianism, and the rest are classified as low Confucianism. In Table 4, the coefficients on *DD* × *Mainland ownership* in columns 1 and 2 are both significantly positive, indicating that the positive impact of mainland shareholders on SOEs' privatisation remains, irrespective of the region's degree of Confucianism. Meanwhile, the coefficients on *DD* × *HMT ownership* in columns 3 and 4 are both negative, but only the coefficient in column 3 is significant, suggesting that Confucian values have a negative effect on improving the capacity utilisation of privatising SOEs when their dominant private shareholders are from HMT. Finally, the coefficients of *DD* × *Foreign ownership* in columns 5 and 6 are statistically insignificant.

Finally, approximately 30% of the sample firms underwent an industry switch during privatisation, necessitating a discussion on its impact on firms' capacity utilisation. Results in Table 4 indicate a significant correlation between industry switch and regional degree of Confucianism. In regions with weaker influence of Confucianism, irrespective of whether mainland shareholders, HMT shareholders, or foreign shareholders dominate, industry switch has a significant negative effect on the capacity utilisation of SOEs. Conversely, in regions embedded deeper in Confucianism, industry-switch positively impacts the capacity utilisation of SOEs, but this effect is significant only when foreign shareholders are dominant. For a more thorough discussion, see Table L.6 in Appendix L in the supplemental data online.

5.3. Robustness check

We conduct a set of robustness checks. First, we establish an instrumental variable to validate the reliability of the conclusions drawn in this study. Second, we employ propensity score matching and add more control variables to ensure the comparability of observations in the treatment and control groups before conducting the DID estimation. Third, we conduct a placebo test and a test of the long-term effects pre- and post-privatisation. Fourth, we employ alternative measures of efficiency and regional institutions. Specifically, we replace capacity utilisation with fixed total asset turnover rates as a proxy of privatisation efficiency. A lower fixed asset turnover rate indicates that within a certain fixed production capacity, the actual output value of the enterprise is lower. Therefore, the fixed asset turnover rate is a good measure of efficiency (Baldwin et al., 2013). Next, for regional marketisation, we examine the five subdimensions of the index, while for regional Confucianism, we replace the number of temples with the number of ancient Chinese academies. Fifth, we examine the robustness of findings in centrally owned SOEs and provincially owned SOEs. Sixth, we test the impact of majority shareholding (i.e., when private shareholders control more than 50% of the total shares). Seventh, we examine the subsamples of competitive industries and monopolistic industries. Finally, we test the impact of complete privatisation and explore the effects related to different waves of privatisation reforms.

The results from these tests are highly consistent with the main findings and are reported and discussed in Appendices C–L in the supplemental data online.

6. DISCUSSION

The privatisation of Chinese SOEs has generated enormous research interest, attracting debates not only from academics but also from policymakers and practitioners. The ultimate question is whether or not privatisation is a good policy. Many researchers have approached this question from different angles, but the economic geography and regional science literature has not yet done so. This study aims to fill that gap and extend the literature by theorising and testing a set of regional factors that might play a key role in the privatisation process of SOEs. Specifically, we propose that regional levels of marketisation, Confucian values embeddedness, and the origins of the private owners of a privatising SOE can determine the efficiency of its privatisation. By examining a set of 63,599 observations of Chinese SOEs, this study makes three contributions to the economic geography literature.

First, this study investigates the importance of the regional institutional environment to the privatisation of SOEs. Prior research shows that institutional quality influences entrepreneurship; weaker institutions prevent firms' ability to evaluate risk and uncertainty and impede latent and emergent entrepreneurship (Audretsch et al., 2022). Regardless of the importance of institutions, prior research has not investigated their impacts on SOEs' privatisation. Since China is a developing country, its formal institutions remain incomplete, leaving room for local governments to interpret and execute policies. This has diverse implications for local businesses (Hou et al., 2021; Xie et al., 2023) and for the effects of privatisation. While the heterogeneity of formal institutions has been examined in relation to private firms' innovation, performance and internationalisation (Du & Luo, 2016; Zeng et al., 2021), it has not been systematically linked to privatisation of SOEs. By showing that local formal institutions (specifically, marketisation level) significantly strengthen the capacity utilisation of privatising SOEs, this study contributes to the literature examining the importance of regional institutions on firm behaviours and performance (Bin et al., 2020; Yang et al., 2020). Our nuanced framework adds to prior research by revealing marketisation's positive impact on the privatisation process of Chinese SOEs.

The impact of the local informal institution, represented by Confucianism, was also investigated in this study. Confucius's ideology of humanness, righteousness, propriety, wisdom, and honesty has been proven to be

Table 4. Regional Confucianism.

Variables	(1) High Confucianism	(2) Low Confucianism	(3) High Confucianism	(4) Low Confucianism	(5) High Confucianism	(6) Low Confucianism
DD × Mainland ownership	0.0413***	0.0305***				
	(3.954)	(4.665)				
DD × HMT ownership			−0.1175***	−0.0140		
			(−3.936)	(−0.349)		
DD × Foreign ownership					−0.2634	−0.0103
					(−1.575)	(−0.400)
Firm size	0.0099**	−0.0015	0.0099**	−0.0016	0.0131***	−0.0016
	(2.370)	(−0.659)	(2.377)	(−0.684)	(2.874)	(−0.677)
Firm age	−0.0076**	−0.0036**	−0.0085***	−0.0040**	0.0024	−0.0040**
	(−2.411)	(−2.072)	(−2.697)	(−2.321)	(0.584)	(−2.322)
Leverage	−0.0442***	−0.0291***	−0.0444***	−0.0298***	−0.0813***	−0.0298***
	(−5.108)	(−6.053)	(−5.119)	(−6.173)	(−7.293)	(−6.172)
Profitability	0.0132	0.0023***	0.0132	0.0023***	0.0000	0.0023***
	(1.077)	(3.347)	(1.077)	(3.350)	(0.411)	(3.350)
Industry switch	0.0092	−0.0063*	0.0089	−0.0066*	0.0164**	−0.0065*
	(1.609)	(−1.722)	(1.552)	(−1.806)	(2.203)	(−1.800)
Province-owned	0.0038	−0.0014	0.0029	−0.0021	0.0037	−0.0022
	(0.390)	(−0.240)	(0.300)	(−0.356)	(0.365)	(−0.367)
Constant	0.6231***	0.7285***	0.6277***	0.7323***	0.5637***	0.7321***
	(13.010)	(27.147)	(13.101)	(27.242)	(10.439)	(27.233)
Observations	12,831	39,290	12,831	39,290	12,831	39,290
R^2	0.745	0.735	0.744	0.733	0.743	0.732

Note: The estimator is firm-level fixed effect. The dependent variable is capacity utilisation. A set of year and industry dummies is included in all specifications. Robust *t*-statistics are shown in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

appropriate and constructive to business practices (Li et al., 2020), which might help strengthen the benefits of privatisation. Indeed, we find that SOEs located in regions deeply embedded in Confucian values find that their capacity utilisation rate improves at a higher pace than those located in the less Confucian regions. This finding stands in sharp contrast to the strand of literature cautioning against incorporation of Confucian values by SOE management on the grounds that it makes them reluctant to adopt a new governance system (Jin et al., 2023). Our findings reveal that privatisation can generate even more substantial improvements in capacity utilisation when it is supported by stronger Confucian institutions. This study thus adds to the literature examining how local Confucian values shape the behaviours and performance of economic agents (Tang et al., 2022; Xie et al., 2023).

Second, by examining the origins of private ownership in relation to regional institutions, this study adds an underexplored regional dimension to the examination of privatisation. We find that private ownership from mainland China significantly enhances privatising firms' capacity utilisation; however once shareholders from foreign countries and HMT become dominant, they exert no significantly stronger effect on capacity utilisation. This finding challenges a strand of literature which argues that investment from more advanced economies has a spillover effect on the local business community (Huang et al., 2017; Lin et al., 2020). It shows that in the context of SOEs' privatisation, cultural distance plays a more important role than advanced know-how. While the technology efficacy of mainland China's private sector is, during the study window (1999–2013), inferior to that of shareholders from HMT and foreign countries, the mainland shareholders have a much clearer understanding of Chinese SOEs compared with the foreign and HMT shareholders (Guan et al., 2021). Their cultural intimacy allows them to cleverly manage the takeover of SOEs in the privatisation process, avoiding conflicts and promoting a harmonised reform that leads to improved capacity utilisation. For foreign shareholders who become dominant in an SOE, their insignificant impact on its capacity utilisation may be explained by the fact that in late 1990s to early 2000s, Chinese institutional environments still favoured conservatism and protectionism (Hu, 2005; Lardy, 1998). During that period of transformation, foreign shareholders may have found it difficult to adapt to SOEs' institutional logics and to resolve conflicts, leading to their non-significant contributions to privatising SOEs' efficiency.

That being said, it is interesting that HMT shareholders, who have the advantages of cultural and geographical proximity *and* advanced know-how, also fail to significantly enhance SOEs' capacity utilisation when their ownership is dominant. This finding adds to a strand of literature that argues for the positive effect of HMT ownership on the performance of mainland China businesses by demonstrating that this effect may not remain when it comes to SOEs. HMT investors may share objectives that are similar to those of the private sector in mainland China, allowing them to build collaboration (Huang et al., 2017), but it seems that even so, they do not find it straightforward to work with Chinese SOEs. To better understand this somewhat counter-intuitive finding, we turn to the literature. Since the literature written in English does not provide a clear answer, we look to the literature written in Chinese. Bao et al. (2017) argue that compared with foreign investors, HMT joint ventures in the China mainland have the benefit of a natural cultural affinity due to their racial and kinship relationships. This should lead to more stable cooperative relationships. However, the authors find that not only do HMT investors exhibit a stronger tendency towards sole ownership, their joint ventures with mainland Chinese partners are more prone to dissolution. Furthermore, the lifespan of joint ventures involving HMT investors is shorter than those that have no HMT involvement. Bao et al. (2017) interpret their surprising findings as confirmation that the mismatch between the institutional environments and cultural values of mainland China and the HMT regions is the main explanation for the low performance of HMT investors. In another study, Hu (2022) finds that acquisitions from China's HMT have hindered the development of new product innovation capabilities, and also that acquisitions from developed countries have reduced R&D investments in Chinese target firms. Hu attributes this counter-intuitive finding to institutional incongruency.

Third, this study proposes and tests the joint effect of regional institutions and the regional origins of private ownership on SOEs' privatisation. This framework allows us to examine the comprehensive role played by a set of regional factors in the process of privatisation. Specifically, it is observed that in regions with high levels of marketisation, when private ownership from mainland China is dominant, the positive impact of privatisation on capacity utilisation is significantly stronger. This finding contributes to prior research examining the role played by marketisation on the local business community (Hou et al., 2021; Yang et al., 2020) by showing that it is also important for the privatisation of SOEs. The effect of foreign ownership is insignificant regardless of the level of local marketisation. This could be explained by the fact that in the early stages of economic reform, Chinese national institutional settings remained weak and unfriendly to foreign investors (Hu, 2005; Lardy, 1998). Given these higher-level institutional constraints, any variation in regional institutions might not be able to transform into a significant efficiency improvement for privatising SOEs.

It is both surprising and interesting to see that HMT ownership may weaken the impact of privatisation on capacity utilisation if SOEs are located in regions with low levels of marketisation. This finding reveals that the HMT owner's hybrid identity (cultural proximity but not sufficiently similar) (Ding et al., 2016) may actually act as a double-edged sword. This pattern was repeated in the results related to regional Confucianism. Specifically, in regions deeply embedded in Confucian values, the effect of privatisation on SOEs' capacity utilisation is weakened if HMT shareholders are dominant. It seems that their hybrid identity may make them feel confident about undertaking a takeover but it does not adequately equip them to navigate the local formal and informal institutional conflicts to achieve a collaborative and constructive reform (Bao et al., 2017; Hu, 2022).

In terms of methodology, this study proposes an examination of how firm efficiency (rather than firm performance) is associated with privatisation. Prior research pays much attention to understanding how privatisation influences firm performance (Fang et al., 2020; Liang et al., 2015) and although performance-based indicators are interesting and meaningful, we believe that efficiency, especially capacity utilisation, is the more relevant outcome of privatisation. During privatisation, a firm might perform better or worse, depending on the trade-off between an enhanced governance system and a reduction in privileges such as soft finance, policy information, and special treatment from the government (Walheer & He, 2020). As such, using resource *allocation* to examine privatisation might yield inconsistent findings, whereas approaching privatisation from the perspective of resource *utilisation* can allow us to understand the real effect of the process in a clearer way. Our study subscribes to Howell (2020) and shows that privatisation enhances SOEs' capacity utilisation rate. We therefore confirm the literature advocating for the need to reform SOEs (Ding et al., 2018; Zheng, 2019). When private owners have a stake in SOEs, they are more strongly motivated to optimise resources, which will help SOEs reach their potential output and reduce idle capacity.

This study offers some policy implications for the Chinese government. Privatisation is a complex process and it is influenced significantly by a number of regional dimensions. Therefore, instead of running it at central level and without a clear policy, the Chinese government should devolve the task of privatising SOEs to local governments who have better understanding of their institutional environments. Also, marketisation should be prioritised because this is proven to enhance the outcome (capacity utilisation) of the privatisation process. The study also has implications for investors from HMT. They should be aware of the potential difficulty of taking over ownership from Chinese SOEs, especially when the enterprise is located in low-marketised and high-Confucian regions. If privatisation is not managed well, a backfire effect might occur in the sense that HMT ownership could weaken the benefits derived from the privatisation process, such as enhanced capacity utilisation.

Our research design helps reveal the impact of privatisation from a regional perspective and allows us to gain deeper insight into the question of whether or not privatisation is good, and how that 'goodness' manifests. Nevertheless, this study is not without limitations that future research may help address. First, we examine two dimensions of regional institutions: marketisation and Confucianism. Future research may investigate other regional institutional forces, such as *Guanxi* (Chinese style networking) and the structural differences caused by the split-share structure reform policies, to see how these impact SOEs' reform. Second, capacity utilisation is only one measure of efficiency associated with privatisation. Future research could examine other efficiency-related indicators and compare them against performance-based indicators.

7. CONCLUSIONS

This study examines the privatisation of Chinese SOEs from a regional perspective. Prior research has shown that regional institutions are essential to local private businesses as they set the 'rules of the game' that firms must obey (Nguyen, 2021). For SOEs, regional institutions will play only a minor role because such firms are typically 'above the game' and enjoy favourable treatments from the government (Du & Mickiewicz, 2016). However, for privatising SOEs, it is unclear whether and how they are influenced by regional institutions. Examining a set of more than 63,500 Chinese SOEs, we find that regional formal institutions (marketisation) and regional informal institutions (Confucianism) positively impact Chinese SOEs' privatisation efficiency. Moreover, we add an important factor to the literature on the regional dimensions of privatisation: the origins of the private ownership. By showing that ownership originating from more developed regions, such as Hongkong, Macau or Taiwan, does not always contribute to the efficiency of privatising Chinese SOEs, this study calls for more research that helps us understand how the flow of capital across regions within a country contributes to the efficiency and performance of SOEs' privatisation.

ACKNOWLEDGEMENTS

The authors thank the editor and two referees for their useful feedback and support during the revision process.

DATA AVAILABILITY

Data are available under reasonable request to the corresponding author.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

FUNDING

Zhe Zhang acknowledges the funding support from the China Scholarship Council [grant number 202206200044].

ORCID

Zhe Zhang http://orcid.org/0009-0005-4205-6365
Bach Nguyen http://orcid.org/0000-0003-1527-7443

REFERENCES

Acemoglu, D., & Johnson, S. (2005). Unbundling institutions. *Journal of Political Economy*, *113*(5), 949–995. https://doi.org/10.1086/432166

Agostino, M., Nifo, A., Trivieri, F., & Vecchione, G. (2020). Rule of law and regulatory quality as drivers of entrepreneurship. *Regional Studies*, *54*(6), 814–826. https://doi.org/10.1080/00343404.2019.1648785

Aretz, K., & Pope, P. F. (2018). Real options models of the firm, capacity overhang, and the cross section of stock returns. *The Journal of Finance*, *73*(3), 1363–1415. https://doi.org/10.1111/jofi.12617

Audretsch, D. B., Belitski, M., Chowdhury, F., & Desai, S. (2022). Necessity or opportunity? Government size, tax policy, corruption, and implications for entrepreneurship. *Small Business Economics*, *58*(4), 2025–2042. https://doi.org/10.1007/s11187-021-00497-2

Baldwin, J. R., Gu, W., & Yan, B. (2013). Export growth, capacity utilization, and productivity growth: Evidence from the Canadian manufacturing plants. *Review of Income and Wealth*, *59*(4), 665–688. https://doi.org/10.1111/roiw.12028

Bao, Q., Xie, H., & Chen, J. (2017). Cultural proximity, cooperation trust, and the durability of foreign joint ventures. *Management World*, *03*, 29–43.

Battese, G. E., & Coelli, T. J. (1995). A model for technical inefficiency effects in a stochastic frontier production function for panel data. *Empirical Economics*, *20*(2), 325–332. https://doi.org/10.1007/BF01205442

Beck, T., Levine, R., & Levkov, A. (2010). Big bad banks? The winners and losers from bank deregulation in the United States. *Journal of Finance*, *65*(5), 1637–1667. https://doi.org/10.1111/j.1540-6261.2010.01589.x

Belloc, F. (2014). Innovation in state-owned enterprises: Reconsidering the conventional wisdom. *Journal of Economic Issues*, *48*(3), 821–848. https://doi.org/10.2753/JEI0021-3624480311

Bin, P., Chen, X., Fracasso, A., & Tomasi, C. (2020). Firm employment growth in China: The role of marketization and regional economic factors. *Growth and Change*, *51*(1), 402–439. https://doi.org/10.1111/grow.12348

Cai, X., Lu, Y., Wu, M., Cai, X., Lu, Y., Wu, M., & Yu, L. (2016). Does environmental regulation drive away inbound foreign direct investment? Evidence from a quasi-natural experiment in China. *Journal of Development Economics*, *123*, 73–85. https://doi.org/10.1016/j.jdeveco.2016.08.003

Charron, N., Dijkstra, L., & Lapuente, V. (2014). Regional governance matters: Quality of government within European union member states. *Regional Studies*, *48*(1), 68–90. https://doi.org/10.1080/00343404.2013.770141

Chen, J., Cumming, D., Hou, W., & Lee, E. (2016). CEO accountability for corporate fraud: Evidence from the split share structure reform in China. *Journal of Business Ethics*, *138*(4), 787–806. https://doi.org/10.1007/s10551-014-2467-2

Chen, L., Jin, Z., Ma, Y., & Xu, H. (2019). Confucianism, openness to the west, and corporate investment efficiency. *European Financial Management*, *25*(3), 554–590. https://doi.org/10.1111/eufm.12173

Chen, M., Xiao, J. Z., & Zhao, Y. (2021). Confucianism, successor choice, and firm performance in family firms: Evidence from China. *Journal of Corporate Finance*, *69*, 102023. https://doi.org/10.1016/j.jcorpfin.2021.102023

Chen, Z., Ge, Y., & Lai, H. (2011). Foreign direct investment and wage inequality: Evidence from China. *World Development*, *39*(8), 1322–1332. https://doi.org/10.1016/j.worlddev.2010.12.006

Choi, S. B., Lee, S. H., & Williams, C. (2011). Ownership and firm innovation in a transition economy: Evidence from China. *Research Policy*, *40*(3), 441–452. https://doi.org/10.1016/j.respol.2011.01.004

Ding, S., Jia, C., Wu, Z., & Yuan, W. (2016). Environmental management under subnational institutional constraints. *Journal of Business Ethics*, *134*(4), 631–648. https://doi.org/10.1007/s10551-014-2388-0

Ding, S., Kim, M., & Zhang, X. (2018). Do firms care about investment opportunities? Evidence from China. *Journal of Corporate Finance*, *52*, 214–237. https://doi.org/10.1016/j.jcorpfin.2018.07.003

Du, J., Liu, X., & Zhou, Y. (2014). State advances and private retreats? – Evidence of aggregate productivity decomposition in China. *China Economic Review*, *31*(December), 459–474. https://doi.org/10.1016/j.chieco.2014.03.002

Du, J., & Mickiewicz, T. (2016). Subsidies, rent seeking and performance: Being young, small or private in China. *Journal of Business Venturing*, *31*(1), 22–38. https://doi.org/10.1016/j.jbusvent.2015.09.001

Du, X., & Luo, J.-h. (2016). Political connections, home formal institutions, and internationalization: Evidence from China. *Management and Organization Review*, *12*(1), 103–133. https://doi.org/10.1017/mor.2015.40

Fan, G., Wang, X. L., & Zhu, H. P. (2007). *Marketization index of China's provinces: 2006 report*. Economic Science Press.

Fang, J., He, H., & Li, N. (2020). China's rising IQ (innovation quotient) and growth: Firm-level evidence. *Journal of Development Economics*, *147*, 102561. https://doi.org/10.1016/j.jdeveco.2020.102561

Feng, X., & Johansson, A. C. (2018). Underpaid and corrupt executives in China's state sector. *Journal of Business Ethics*, *150*(4), 1199–1212. https://doi.org/10.1007/s10551-016-3190-y

Fritsch, M., & Storey, D. J. (2014). Entrepreneurship in a regional context: Historical roots, recent developments and future challenges. *Regional Studies*, *48*(6), 939–954. https://doi.org/10.1080/00343404.2014.892574

Guan, J., Gao, Z., Tan, J., Sun, W., & Shi, F. (2021). Does the mixed ownership reform work? Influence of board chair on performance of state-owned enterprises. *Journal of Business Research*, *122*, 51–59. https://doi.org/10.1016/j.jbusres.2020.08.038

Hou, F., Tang, W., Wang, H., & Xiong, H. (2021). Economic policy uncertainty, marketization level and firm-level inefficient investment: Evidence from Chinese listed firms in energy and power industries. *Energy Economics*, *100*, 105353. https://doi.org/10.1016/j.eneco.2021.105353

Howell, A. (2020). Agglomeration, absorptive capacity and knowledge governance: Implications for public–private firm innovation in China. *Regional Studies*, *54*(8), 1069–1083. https://doi.org/10.1080/00343404.2019.1659505

Hu, F. (2022). Do foreign acquisitions improve the performance of acquired companies – Basing on quasi-nature experiment of acquisitions events in China. *China Journal of Economics*, *9*(3), 273–299.

Hu, F. Z. Y. (2005). Deconstructing state-owned enterprises in socialist China under reform: A scalar examination. *Environment & Planning A*, *37*(4), 703–722. https://doi.org/10.1068/a3749

Huang, J., Chen, X., Huang, B., & Yang, X. (2017). Economic and environmental impacts of foreign direct investment in China: A spatial spillover analysis. *China Economic Review*, *45*, 289–309. https://doi.org/10.1016/j.chieco.2016.03.006

Jin, Z., Li, Y., & Liang, S. (2023). Confucian culture and executive compensation: Evidence from China. *Corporate Governance: An International Review*, *31*(1), 33–54. https://doi.org/10.1111/corg.12434

José Gahn, S. (2020). Is there a declining trend in capacity utilization in the US economy? A technical note. *Review of Political*

Economy, *32*(2), 283–296. https://doi.org/10.1080/09538259.2020.1769906
Lardy, N. R. (1998). *China's unfinished economic revolution*. Brookings Institution Press.
Le, M.-D., Pieri, F., & Zaninotto, E. (2019). From central planning towards a market economy: The role of ownership and competition in Vietnamese firms' productivity. *Journal of Comparative Economics*, *47*(3), 693–716. https://doi.org/10.1016/j.jce.2019.04.002
Li, S., Lin, Y. C., & Selover, D. D. (2014). Chinese state-owned enterprises: Are they inefficient? *The Chinese Economy*, *47*(5–6), 81–115.
Li, W., Xu, X., & Long, Z. (2020). Confucian culture and trade credit: Evidence from Chinese listed companies. *Research in International Business and Finance*, *53*, 101232. https://doi.org/10.1016/j.ribaf.2020.101232
Liang, H., Ren, B., & Sun, S. L. (2015). An anatomy of state control in the globalization of state-owned enterprises. *Journal of International Business Studies*, *46*(2), 223–240. https://doi.org/10.1057/jibs.2014.35
Lin, B., Du, R., Dong, Z., Jin, S., & Liu, W. (2020). The impact of foreign direct investment on the productivity of the Chinese forest products industry. *Forest Policy and Economics*, *111*, 102035. https://doi.org/10.1016/j.forpol.2019.102035
Liu, J., Wang, Z., & Zhu, W. (2021). Does privatization reform alleviate ownership discrimination? Evidence from the split-share structure reform in China. *Journal of Corporate Finance*, *66*, 101848. https://doi.org/10.1016/j.jcorpfin.2020.101848
Lounsbury, M., Steele, C. W., Wang, M. S., & Toubiana, M. (2021). New directions in the study of institutional logics: From tools to phenomena. *Annual Review of Sociology*, *47*(1), 261–280. https://doi.org/10.1146/annurev-soc-090320-111734
Lu, J., & Li, H. (2022). Can high-speed rail improve enterprise capacity utilization? A perspective of supply side and demand side. *Transport Policy*, *115*, 152–163. https://doi.org/10.1016/j.tranpol.2021.11.002
Marques, P., & Morgan, K. (2021). Innovation without regional development? The complex interplay of innovation, institutions, and development. *Economic Geography*, *97*(5), 475–496. https://doi.org/10.1080/00130095.2021.1972801
Moodysson, J., & Zukauskaite, E. (2014). Institutional conditions and innovation systems: On the impact of regional policy on firms in different sectors. *Regional Studies*, *48*(1), 127–138. https://doi.org/10.1080/00343404.2011.649004
Nguyen, B. (2021). Regional informal institutions, local governance and gendered entrepreneurship. *Regional Studies*, *55*(7), 1169–1181. https://doi.org/10.1080/00343404.2021.1889489
North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.
Rodríguez-Pose, A. (2013). Do institutions matter for regional development? *Regional Studies*, *47*(7), 1034–1047. https://doi.org/10.1080/00343404.2012.748978
Roxas, B., & Chadee, D. (2013). Effects of formal institutions on the performance of the tourism sector in the Philippines: The mediating role of entrepreneurial orientation. *Tourism Management*, *37*(8), 1–12. https://doi.org/10.1016/j.tourman.2012.10.016
Shi, J., Sadowski, B., Li, S., & Nomaler, Ö. (2020). Joint effects of ownership and competition on the relationship between innovation and productivity: Application of the CDM model to the Chinese manufacturing sector. *Management and Organization Review*, *16*(4), 769–789. https://doi.org/10.1017/mor.2020.13
Slater, D., & Arugay, A. A. (2018). Polarizing figures: Executive power and institutional conflict in Asian democracies. *American Behavioral Scientist*, *62*(1), 92–106. https://doi.org/10.1177/0002764218759577
Sun, B., Zhu, P., & Li, W. (2019). Cultural diversity and new firm formation in China. *Regional Studies*, *53*(10), 1371–1384. https://doi.org/10.1080/00343404.2019.1566700
Tan, Y., Tian, X., Zhang, X., & Zhao, H. (2020). The real effect of partial privatization on corporate innovation: Evidence from China's split share structure reform. *Journal of Corporate Finance*, *64*, 101661. https://doi.org/10.1016/j.jcorpfin.2020.101661
Tang, X., Gu, Y., Weng, R., & Ho, K. (2022). Confucianism and corporate fraud. *International Journal of Emerging Markets*, *17*(6), 1425–1445. https://doi.org/10.1108/IJOEM-12-2019-1004
Thornton, P. H., & Ocasio, W. (2008). Institutional logics. *The Sage handbook of organizational institutionalism*, *840*(2008), 99–128. https://doi.org/10.4135/9781849200387.n4
Tkachenko, A., Yakovlev, A., & Kuznetsova, A. (2017). Sweet deals: State-owned enterprises, corruption and repeated contracts in public procurement. *Economic Systems*, *41*(1), 52–67. https://doi.org/10.1016/j.ecosys.2016.12.002
Walheer, B., & He, M. (2020). Technical efficiency and technology gap of the manufacturing industry in China: Does firm ownership matter? *World Development*, *127*, 104769. https://doi.org/10.1016/j.worlddev.2019.104769
Wang, X. L., Fan, G., & Yu, J. W. (2017). *Marketization index of China's provinces: NERI report 2016*. Social Sciences Academic Press.
Wang, Z.-a., & Zheng, C. (2022). Is technological innovation the cure for overcapacity? Exploring mediating and moderating mechanisms. *Journal of Business Research*, *147*, 348–361. https://doi.org/10.1016/j.jbusres.2022.04.005
Wang, Z., Yang, H., & Zhang, X. (2021). History matters: The effects of Chinese ports from 170 years ago on entrepreneurship today. *Regional Studies*, *55*(4), 630–644. https://doi.org/10.1080/00343404.2020.1839641
Williamson, O. E. (2000). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature*, *38*(3), 595–613. https://doi.org/10.1257/jel.38.3.595
Wu, H., & Xu, B. (2021). Did state-owned enterprises do better during COVID-19? Evidence from a survey of company executives in China. *Journal of Economics and Business*, *115*, 105991. https://doi.org/10.1016/j.jeconbus.2021.105991
Xie, W., Guo, J., & Zhang, H. (2023). Confucian culture and the external pay gap. *China Journal of Accounting Research*, 100291. https://doi.org/10.1016/j.cjar.2023.100291
Yan, Y., Xu, X., & Lai, J. (2021). Does Confucian culture influence corporate R&D investment? Evidence from Chinese private firms. *Finance Research Letters*, *40*, 101719. https://doi.org/10.1016/j.frl.2020.101719
Yang, D., Wang, G., & Lu, M. (2020). Marketization level, government intervention and firm M&As: Evidence from the local SOEs in China. *Applied Economics Letters*, *27*(5), 378–382. https://doi.org/10.1080/13504851.2019.1616059
Yang, J. J., Tsui-Auch, L. S., & Wang, X. (2023). Dehybridization in the face of the party–state: A longitudinal case study of a Chinese SOE's corporate governance responses to institutional change. *Journal of Business Ethics*, *182*(3). https://doi.org/10.1007/s10551-021-04879-0
Yu, J., & Nijkamp, P. (2009). Ownership, R&D and productivity change: Assessing the catch-up in China's high-tech industries. *Studies in Regional Science*, *39*(1), 149–173. https://doi.org/10.2457/srs.39.149
Yu, M., & Deng, X. (2021). The inheritance of marketization level and regional human capital accumulation: Evidence from China. *Finance Research Letters*, *43*, 102268. https://doi.org/10.1016/j.frl.2021.102268
Zeng, W., Li, L., & Huang, Y. (2021). Industrial collaborative agglomeration, marketization, and green innovation: Evidence from China's provincial panel data. *Journal of Cleaner*

Production, *279*, 123598. https://doi.org/10.1016/j.jclepro.2020.123598
Zhan, J., & Zhu, J. (2021). The effects of state ownership on innovation: Evidence from the state-owned enterprises reform in China. *Applied Economics*, *53*(1), 145–163. https://doi.org/10.1080/00036846.2020.1796918
Zheng, Y. (2019). Privatization with 'vested interests' in China. *Socio-Economic Review*, *17*(3), 767–791. https://doi.org/10.1093/ser/mwx023
Zhou, X. (2021). Chinese bureaucracy through three lenses: Weberian, Confucian, and Marchian. *Management and Organization Review*, *17*(4), 655–682. https://doi.org/10.1017/mor.2021.34