

RESEARCH ARTICLE

China's Corporate Social Credit System: The Dawn of Surveillance State Capitalism?

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Abstract

Chinese state capitalism may be transitioning towards a technology-assisted variant that we call “surveillance state capitalism.” The mechanism driving this development is China’s corporate social credit system (CSCS) – a data-driven project to evaluate the “trustworthiness” of all business entities in the country. In this paper, we provide the first empirical analysis of CSCS scores in Zhejiang province, as the Zhejiang provincial government is to date the only local government to publish the scores of locally registered firms. We find that while the CSCS is ostensibly a means of measuring legal compliance, politically connected firms receive higher scores. This result is driven by a “social responsibility” category in the scoring system that valorizes awards from the government and contributions to causes sanctioned by the Chinese Communist Party. Our analysis underscores the potential of the CSCS to nudge corporate fealty to party-state policy and provides an early window into the far-reaching potential implications of the CSCS.

摘要

中国的国家资本主义可能正在转型为一种由技术辅助的“监控型国家资本主义”。推动这一发展的机制是中国的企业社会信用体系。这是一个以数据为导向的企业监控项目，其作用是以分数或等级的形式评估国内所有商业实体的信用。当下，在中国的所有地方政府中，仅有浙江省向社会公示其管辖范围内注册公司的社会信用评价结果。本文即是对浙江省企业社会信用分的首例实证研究。本文发现，虽然企业社会信用体系表面上是一种衡量企业合规性的措施，但有政治关联的公司往往会获得了更高的评分。这一结果是由评分系统中的“社会责任”一项所驱使的，该项目为获颁政府认可奖项和对中国共产党认可的事业作出贡献或捐款的公司带来更高的评分。因此，本文凸显了企业社会信用体系在驱使企业效忠党国政策方面的可能性，并为中国企业社会信用体系深远的潜在影响提供了早期证据。

Keywords: social credit system; state capitalism; Chinese Communist Party; compliance; regtech

关键字: 社会信用体系; 国家资本主义; 中国共产党; 合规; 监管科技

China emerged as a global economic power under a system of state capitalism, a 21st-century addition to the taxonomy of the varieties of capitalism.¹ No variety of capitalism is static, however, and Chinese state capitalism appears to be transitioning towards a technology-assisted variant that we call “surveillance state capitalism.” The mechanism driving the emergence of this variant is China’s corporate social credit system (*qiye shehui xinyong tixi* 企业社会信用体系) (CSCS) a data-driven project to evaluate the “trustworthiness” (*xinyong* 信用) of all business entities registered in the country. Running parallel to similar social credit evaluation systems for individuals, social

1 Hall and Soskice (2001, vi) identify a binary taxonomy between “liberal market economies” and “coordinated market economies” at the end of the 20th century.



organizations and even local governments,² the CSCS is linked to a regime of rewards and punishments for compliant and non-compliant firms. It was originally conceived as a self-enforcing mechanism to discipline market behaviour in the absence of a functional legal system in the period of economic transition; today, the CSCS represents a strategy of data-based monitoring to calibrate regulatory scrutiny and market access for all companies in China.³

Striking in its ambition, the social credit system is “a complex, sweeping, government-wide initiative that reaches into every sector of the economy and touches on such issues as data collection, corporate regulation, finance, consumer advocacy, and geopolitics.”⁴ The social credit system, of which its corporate component is a central but relatively understudied element, is an attempt to use data as the basis of a new operating system for society underpinned by notions of socialist legality rooted in compliance with state-led norms, detached from Western rule-of-law ideologies and practices.⁵

The national and local infrastructure for CSCS is still far from complete, and the role the system will come to play in the Chinese political economy is an open question. To gain initial insight into the operation and potential implications of the CSCS, we provide the first empirical analysis of CSCS scores from Zhejiang province, as the Zhejiang provincial government is to date the only local government to publish the scores of locally registered firms. Several findings are noteworthy. We find no significant evidence that more profitable firms or firms with better governance (proxied by more independent boards of directors) receive higher overall scores. However, highly leveraged firms, subject to higher default risks, are associated with lower total scores. Perhaps most importantly, we find that, all else being equal, politically connected firms receive higher overall scores in Zhejiang than unconnected firms. The channel for this result is a “social responsibility” category that valorizes awards from the government and contributions to causes sanctioned by the Chinese Communist Party (CCP). This finding underscores the potential of the CSCS to incentivize corporate fealty to the CCP’s industrial and social policies. While our results, based on the scores from a single province, have clear limitations, they provide an early window into the design characteristics, operation and potential implications of the CSCS for the country as a whole.

The paper proceeds as follows. The following section describes the principal features of the CSCS and situates them at the intersection of three contemporary phenomena in the global political economy: Chinese state capitalism, the surveillance state and surveillance capitalism. The subsequent section discusses the national administration of the CSCS and its local implementation in Zhejiang province. The penultimate section presents an empirical analysis of the scoring system in Zhejiang. The final section explores the potential implications of the CSCS for the Chinese political economy and corporate governance.

Corporate Social Credit and Surveillance State Capitalism

Overview

The CSCS is a programme to amass data on regulatory compliance, inspections, payments of taxes and court judgments, and civic conduct of business entities, and to generate publicly available social

2 Creemers (2018) provides a comprehensive analysis of the ecosystem and objectives of the social credit system. With a few notable exceptions, most media and scholarly attention to date has focused on the social credit system for individuals. The most detailed analyses of the CSCS to date are Schaefer (2020) and ECCC (2019). Notwithstanding greater public attention devoted to the social credit system for individuals, a recent report by MERICS (2021) indicates that corporations have been the primary focus of government attention.

3 See Chen, Lin and Liu 2018, 9 (“Chinese policymakers view social credit as a strategic plan for the ‘socialist market economy system and the social governance system’,” quoting a government planning document); see also ECCC 2019.

4 Schaefer 2020, 3.

5 Backer 2019, 209. Krause et al. (2022) highlight the distinctiveness of China’s corporate credit reporting system, of which CSCS is a part, as compared to US and German systems.

credit profiles that can be used by government agencies and market participants. “Social credit” in this context connotes “trustworthiness” or “compliance with obligations,” rather than loyalty to the CCP,⁶ but the line between law and politics in China is blurred by the omnipresence of the CCP in all institutions and facets of society. Conceptually, the CSCS represents a market access regime in which only trustworthy enterprises participate, and trustworthiness is determined on the basis of data amassed and analysed by the party-state.⁷

Planning for a comprehensive social credit programme to supplement China’s weak legal system began in the 1990s, to address widespread fraud and corporate malfeasance as the country transitioned from central planning to a fledgling market economy.⁸ Those efforts culminated in 2014 with the release of the Planning Outline for the Construction of a Social Credit System (2014–2020) (*Shehui xinyong tixi jianshe guihua gangyao [2014–2020] 社会信用体系建设规划纲要[2014–2020]*) (hereafter the 2014 Planning Outline), a comprehensive programme to evaluate the social credit of individuals, businesses, government entities and other organizations. Different rating standards and rules published by the local governments will be applied to each of the target groups. Today, the social credit system is also the centrepiece of China’s digital governance strategy, marking a shift towards a self-regulating marketplace – that is, one in which actors are coerced and/or incentivized to conform their behaviour to norms established by the party-state beyond the ordinary channels of law and regulation.

The CSCS has two principal features. The first is nationwide data collection covering every company registered in China.⁹ The data are drawn from a wide range of regulatory agencies, central and local governments, the judiciary and private platforms. Two basic types of information will be collected in the CSCS when it is fully operational: (1) public credit information, which is generated by a company’s interactions with governmental organs and regulatory agencies, such as fines, judgments and business licenses; and (2) market credit information, which is generated by a company’s interactions with other market actors, such as consumer complaints and data generated by credit rating agencies and industry associations. This information will be compiled in a social credit file tied to a Unified Social Credit Identifier, which is issued to every business entity. The data will be used in local-government-administered scoring systems, most of which are still under construction, to produce a searchable public credit score for every enterprise registered in the locality – from large, publicly listed firms to the corner barbershop.

The second principal element of the CSCS is a regime of rewards and punishments (in the form of “redlists” and “blacklists”) maintained by government agencies.¹⁰ Some lists have broad reach, such as failure to satisfy court judgments, while others apply only to specific sectors of the economy, such as food or medicine.¹¹ Agencies at the national level stipulate the criteria for inclusion in a redlist or blacklist, but an entity is placed on a list by the local branch of the agency where the entity is registered. An entity’s inclusion on a redlist or blacklist becomes part of its CSCS file and is a matter of public record. Blacklist and redlist information is centralized and may trigger rewards or punishments by other agencies – the “joint rewards and punishments mechanism” (*lianhe jiangcheng jizhi 联合奖惩机制*), increasing the system’s behaviour-modification potential.¹²

6 Schaefer 2020, 16; ECCC (2019, 13) reports that most ratings are concerned with strict compliance with market rules and regulations.

7 ECCC 2019, 7.

8 Schaefer 2020.

9 Foreign enterprises registered in China are also subject to the CSCS.

10 Redlists and blacklists have a long history of use in China. See Schaefer 2020, 26–27.

11 Ibid.

12 As of September 2021, 44 joint reward and punishment memorandums have been signed by various central government agencies. There are also numerous joint memos signed at the local level. See <https://www.creditchina.gov.cn/lianhejiangcheng/lingyulianhejiangcheng/>. Accessed 14 September 2021.

Inclusion in a redlist can confer a variety of benefits, ranging from expansion of access to loans to a reduction in the frequency of inspections. Redlisting also raises the entity's CSCS score in the locally administered system, which increases opportunities in public procurement processes and access to financing, particularly for small and medium-sized entities. Inclusion in a blacklist triggers market barriers such as restrictions on obtaining government approvals, greater frequency of inspections, and prohibitions on obtaining credit or issuing stock. Blacklisting also lowers an entity's CSCS score in the locally administered system. When an entity is placed on a blacklist, its legal representative and those individuals directly responsible for the infraction will also be blacklisted.¹³ In some situations, the CSCS will require that businesses monitor the social credit files of their suppliers and business partners.¹⁴

The CSCS is not only directed at monitoring and modifying the behaviour of market actors. It is also a major advance in Beijing's long-standing objective of using technology to increase the efficiency and scalability of government processes. In its Guiding Opinions on Accelerating the Construction of a Social Credit System and Building a New Credit-based Supervisory Mechanism (*Guanyu jiakuai tuijin shehui xinyong tixi jianshe goujian yi xinyong wei jichu de xinxing jianguan jizhi de zhidao yijian* 关于加快推进社会信用体系建设构建以信用为基础的新型监管机制的指导意见) (hereafter the 2019 Guiding Opinions), the State Council depicted social credit as the basis for government supervision over market entities and called for the building of "credit-score-based supervision" (*xinyong fenji fenlei jianguan* 信用分级分类监管). Based on the ratings given in accordance with the public credit scores, highly rated companies will be subject to less supervision; low-rated companies will be warned and subject to heightened supervision by local government agencies. In this sense, the CSCS is an advanced incarnation of nascent regulatory technology or "regtech" initiatives around the world, in which analogue-era regulatory strategies are shifted to digital and computational models.¹⁵

Towards surveillance state capitalism?

The preceding overview of the CSCS raises questions about its potential impact on the Chinese political economy. As previously noted, it was envisioned as a means of building trust among economic actors and improving market performance through enhanced corporate compliance and law enforcement. In this respect, the CSCS resembles an enhanced version of existing credit rating systems and nascent regtech initiatives found throughout market economies. But when situated in existing, CCP-centric corporate governance institutions and practices, and given the pervasive efforts of the CCP to inculcate fealty to its political objectives and eliminate regime threats, the CSCS begins to look like a means of fusing Chinese state capitalism with the surveillance state. If this outcome is realized, CSCS will lead China's transition to what we call surveillance state capitalism.

The current form of Chinese state capitalism is broadly characterized by a combination of capitalist institutions – corporations and markets – and pervasive party-state influence over the financial system and business sector,¹⁶ both through formal mechanisms such as state-owned enterprises (SOEs) and CCP committees internal to large firms, and through informal channels of persuasion and coercion facilitated by the CCP's supra-legal status in the political economy.¹⁷ The CSCS is potentially a powerful means of tightening the party-state's monitoring of all companies in China, regardless of their ownership structure, by leveraging the power of data collection and analysis.

13 Chen, Lin and Liu 2018, 15–16.

14 ECCC 2019, 20.

15 For an overview of regtech, see Barefoot 2020.

16 See, generally, Liebman and Milhaupt 2016.

17 Milhaupt and Zheng (2015) argue that the line between "state-owned" and "private" enterprises in China is blurred due to the weak rule of law and power of the CCP; thus the state's equity ownership in a given firm is not an informative measure of the party-state's influence over its governance.

The CSCS would not be possible without the ability to collect and analyze enormous amounts of data generated by the interactions of businesses with regulators, courts and other market participants. Before the full-blown emergence of the modern surveillance state, scholars noted that authoritarian regimes faced difficulties in collecting information due to the lack of an independent press and civil society organizations.¹⁸ Indeed, although China under the CCP has a long history of politically motivated surveillance, until relatively recently the effort was decidedly low tech, relying primarily on a network of local informants in neighbourhoods, schools and workplaces. The advent of AI, biometric identification systems and the digitization of policing and other government procedures has dramatically altered the capacity of authoritarian regimes to monitor and influence the behaviour of their populations in real time.

Beijing has long pursued the goal of assembling a vast, sophisticated network of interrelated technologies to predict, identify and neutralize perceived threats to the regime before they materialize.¹⁹ Human Rights Watch concludes that the “Chinese government is perfecting a system of social control that is both all-encompassing and highly individualized, using a mix of mechanisms to impose varying levels of supervision and constraint on people depending on their perceived threat to the state.”²⁰

China’s big tech companies have served as proving grounds for the government’s efforts to connect huge, disparate data sets.²¹ Huawei, Alibaba, Tencent and other Chinese companies have collaborated in the creation of a meta-database (the National “Internet + Monitoring” System *guojia “hulianwang + jianguan” xitong* 国家“互联网+监管”系统) that integrates monitoring and credit information on companies from a wide range of government, commercial and e-commerce sources.²² More recently, at the request of Beijing, Ant Group, the financial services affiliate of Alibaba under the control of Jack Ma 马云, contributed its data on consumer loans and personal credit to a new credit scoring joint venture with SOEs.²³

The goal of obtaining massive surveillance capacity on market behaviour to generate inputs for the CSCS has obvious parallels to what has come to be known as surveillance capitalism, which may loosely be defined as the use of data on human behaviour as raw material for a new form of market exchange.²⁴ In surveillance capitalism, the “behavioural surplus” generated by user interactions with a platform or app is claimed as the property of private firms for the generation of profits; and thus, the power over this data is held in the first instance not by the state, but by “surveillance capitalists” such as Facebook and Alibaba.²⁵

In developing the CSCS, the Chinese government has embraced the basic logic of surveillance capitalism,²⁶ but turned that logic on its head. The data used in the CSCS is not principally accumulated by private companies but by government organs at the national and local level, as business entities interact with regulatory agencies and the courts. More importantly, in the CSCS, data generated by human behaviour (conducted via business organizations) is not commodified for private profit; rather, it is amassed and analysed in service of the party-state’s interests – market surveillance

18 Ginsberg and Moustafa 2008, 7–8.

19 The government has enlisted both state-owned and private firms in the creation of this surveillance infrastructure – for example, AI startups Hikvision and SenseTime. State-owned China Electronics Technology Group Corporation built much of the surveillance infrastructure in Xinjiang. US firms such as Apple, Cisco and Oracle have been criticized for contributing to this effort.

20 Kenneth Roth and Maya Wong, “Data leviathan: China’s burgeoning surveillance state,” *New York Review of Books*, 16 August 2019, <https://www.hrw.org/news/2019/08/16/data-leviathan-chinas-burgeoning-surveillance-state>. Accessed 22 January 2022. On the political economy of China’s modern surveillance system, see Huang and Tsai 2022.

21 RAND Corporation 2020, 19.

22 ECCC 2019, 5.

23 Jing Yang, “Jack Ma’s Ant moves ahead with credit-scoring firm,” *Wall Street Journal*, 26 November 2021, <https://www.wsj.com/articles/ant-moves-ahead-with-credit-scoring-company-11637921775>. Accessed 1 October 2022.

24 Zuboff 2019.

25 Ibid.

26 See Aho and Duffield 2020, 188.

and behaviour modification in conformity with its policy objectives.²⁷ It is a striking manifestation of the Chinese leadership's Schumpeterian confidence in the ability of a rational bureaucracy to assess market competence.

Thus, conceptually, the CSCS is much more than an automated version of a credit rating agency such as Moody's or S&P. It is an enormously ambitious regtech approach to improved corporate compliance and governmental supervision, filling enforcement gaps in the Chinese legal system and shortcomings in regulatory capacity. If its potential is fully realized – a significant “if,” given the demands the system will place on accurate data collection and its effective centralization and downstream use by local governments – the CSCS will supply a technological solution to existing limitations on party-state control over the corporate sector²⁸ and propel the emergence of a powerful, data-driven variant of Chinese state capitalism. The role the CSCS will ultimately play in China, however, depends on its implementation at both the national and local levels, the subject to which we now turn.

Administration and Implementation of the CSCS

The CSCS is administered at the central level by the National Development and Reform Commission (NDRC), a powerful state planning agency, and the People's Bank of China, the central bank. The State Administration for Market Regulation, an antitrust authority, is also involved, as it collects a large amount of data on enterprises and maintains a “heavily distrusted entities list” (*yanzhong weifa shixin mingdan* 严重违法失信名单), which is fed into the sanctioning mechanism of the CSCS. An inter-ministerial conference composed of numerous government agencies and Party bodies coordinates the sharing of information and imposition of sanctions.²⁹

Publication of the 2014 Planning Outline touched off a “waterfall effect” of government agency involvement in the CSCS at descending levels of government.³⁰ But the CSCS in operation today is not a unified, standardized system. Overarching design features such as grading and punishment systems and policies on technical issues such as the scope of data collection and storage are established at the national level.³¹ Each provincial, city and district government is responsible for setting up a CSCS to score firms registered in its locality. A digitized evaluation system to generate a score for each registered enterprise will eventually be established locally throughout the country.³²

Implementation of the CSCS at the local level is most advanced in Zhejiang province. Zhejiang is one of the most economically developed coastal provinces and home to a thriving private sector, including Alibaba Group. Zhejiang is also a frontrunner in building the assessment model for public credit, which is the core of an enterprise's overall social credit assessment, and the only province that has made the public credit scores publicly available thus far.³³ As of June

27 As previously noted, the CSCS is also a central component of what the RAND Corporation calls China's “national big data strategy” – a whole-of-government effort to unlock technology's potential to improve the provision of government services and enhance government capacity in the performance of economic, military, police and intelligence functions. RAND Corporation 2020, vii.

28 Milhaupt (2020) notes that agency problems and span-of-control challenges limit the government's capacity to control the state sector.

29 Chen, Lin and Liu 2018, 13.

30 Schaefer 2020, 17.

31 A public consultation draft was published by NDRC in July 2021 regarding the scope of public credit information. See NDRC, “Quanguo gonggong xinyong xinxi jichu mulu (2021 nian ban) (zhengqiu yijian gao)” (National public credit information basic catalogue [2021 version] [public consultation draft]), *Gov.cn*, 18 July 2021, http://www.gov.cn/xinwen/2021-07/18/content_5625819.htm. Accessed 19 October 2022.

32 Schaefer 2020, 17–18.

33 While most provinces and municipalities have promulgated master regulations relating to public credit assessment, only 12 had published scoring standards by June 2022, and only two of these (Shandong and Zhejiang provinces) had completed digitized evaluation systems and databases.

2021, the Zhejiang government had completed public credit assessments for 3 million business enterprises.³⁴

According to the Guidelines for the Evaluation of the Public Credit of Five Types of Subjects in Zhejiang Province (2020 Version) (*Zhejiang sheng wulei zhuti gonggong xinyong pingjia zhiyin [2020 ban]* 浙江省五类主体公共信用评价指引[2020版]) (hereafter the 2020 Zhejiang Guidelines), the enterprise public credit scores are evaluated under three levels of indicators (see the Appendix for Zhejiang province's evaluation and scoring system). The first-level indicators include the following five components: *Basic Data*, *Finance and Taxation*, *Governance*, *Compliance* and *Social Responsibility*. The 2020 Zhejiang Guidelines assign different weights to each component, following industry practice and expert recommendations. The total possible score is 1,000, of which *Basic Data* accounts for 80 points (8 per cent of the total), *Finance and Taxation* 195 points (19.5 per cent), *Governance* 90 points (9 per cent), *Compliance* 450 points (45 per cent), and *Social Responsibility* 185 points (18.5 per cent). Second- and third-level indicators break down those components and scores into more fine-grained subsets. As noted above, public credit information refers to the data or information collected by government bodies or legally authorized administrative bodies in the performance of their duties or in the process of providing public services.³⁵ The scores, therefore, do not currently contain market credit information generated by consumers, industry associations, etc. or information voluntarily provided by the enterprises, such as financial and management performance. The Appendix shows the content and weighting of data for all three levels of indicators.

The *Basic Data* indicator aggregates information on key corporate personnel and the business itself to determine if dishonest acts or abnormal operations have occurred. Points are deducted if an enterprise's directors, actual controllers or other key personnel are listed as having committed serious dishonest acts by any government agency, or if they have failed to satisfy a court judgment. *Finance and Taxation* aggregates information on the creditworthiness of the enterprise. Points are deducted if the enterprise failed to pay debts, social insurance fees or taxes. *Governance* aggregates information related to an enterprise's product quality, safety record and environmental compliance. Points are deducted for poor inspection results and accidents. The *Compliance* indicator aggregates information on an enterprise's record of compliance with a wide range of agencies and judicial authorities, with deductions for administrative penalties, criminal conduct and other enforcement actions. *Social Responsibility* aggregates information on redlisting, awards from government organs and charitable donations. Unlike the format of the other indicators, in which points are deducted from the base score to penalize bad conduct, in the *Social Responsibility* category the base score is zero and points are added for good behaviour.

To gain insights into the implementation of the CSCS in Zhejiang province, we collected publicly available scores on the Zhejiang provincial government website as of 1 July 2021. All 531 A-share listed companies headquartered in Zhejiang are included in our sample. According to the 2020 Zhejiang Guidelines, scores range from 0 to 1,000 and on this basis enterprises are rated as "excellent" (greater than or equal to 850), "good" (800–849), "average" (750–799), "fair" (700–749) or "poor" (less than 700). Table 1 and Figure 1 present the distribution of ratings and scores.

As is evident from Table 1, ratings are not equally distributed. Of all the firms, 74.2 per cent are rated "excellent," while only about 2 per cent are rated "fair" or "poor." Overall, around 90 per cent of the firms are rated "excellent" or "good." The high average ratings may be indicative of the

34 Credit Zhejiang 2021. Note that the CCP is the only social, political or economic actor not subject to evaluation.

35 See Article 2 of the "Zhejiang Province Regulations on the Management of Public Credit Information" (*Zhejiang sheng gonggong xinyong xinxi guanli tiaoli* 浙江省公共信用信息管理条例), promulgated by Zhejiang provincial development and reform commission in 2017, available at: https://fzggw.zj.gov.cn/art/2021/8/24/art_1229561684_2327360.html.

Table 1. Distribution of Ratings and Scores

Variable	N	%	Mean	S.D.	Min.	Median	Max.
<i>Ratings</i>							
Excellent ($S \geq 850$)	394	74.20	884.31	21.27	851	875	935
Good ($800 \leq S < 850$)	88	16.57	833.74	12.64	802	839	849
Average ($750 \leq S < 800$)	38	7.16	779.58	11.15	755	785	799
Fair ($700 \leq S < 750$)	5	0.94	734.80	9.81	725	735	746
Poor ($S < 700$)	6	1.13	651.00	63.89	541	685	695
<i>Scores</i>							
Basic Data (80)			79.47	4.04	40	80	80
Finance and Taxation (195)			189.59	11.80	107	195	195
Governance (90)			88.61	4.89	60	90	90
Compliance (450)			435.97	29.96	244	450	450
Social Responsibility (185)			70.75	25.07	0	60	150

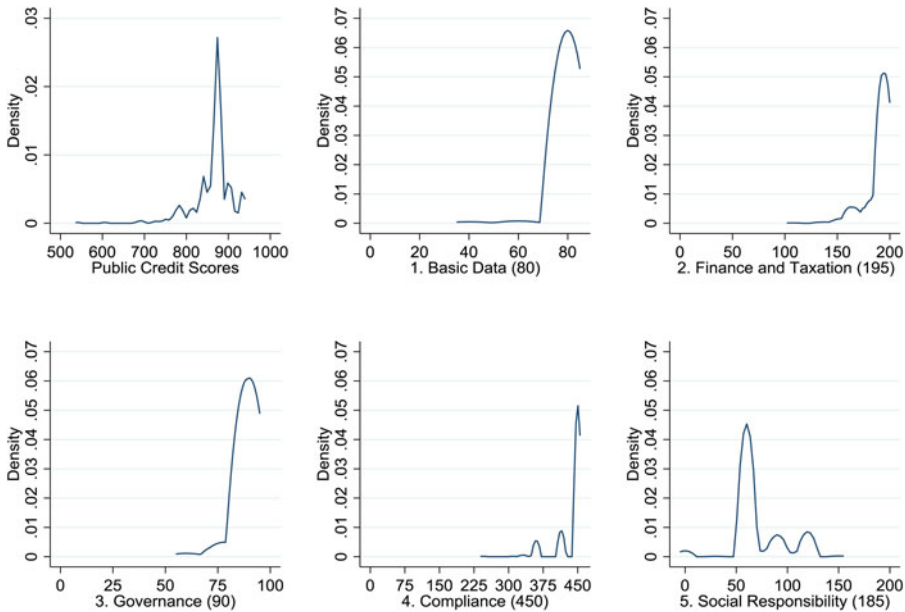


Figure 1. Kernel Density Plot of Public Credit Scores

Notes: Kernel = epanechnikov, bandwidth = 5.0000.

comparatively high quality of listed firms in this economically developed region of China, or may signal poor-quality data in the system. Further analysis will have to await publication of scores over time in Zhejiang or in other provinces. As mentioned, the NDRC established the new credit-score-based supervision linking a firm’s performance in the public credit rating system to

the intensity of regulatory oversight. Following the national policy, Zhejiang has strengthened supervision of firms rated “fair” and “poor” as well as those included in a national blacklist.³⁶

While no firm received a perfect score, the average score of 864.39 carries an “excellent” rating. The summary statistics in Table 1 and the Kernel density estimation plot in Figure 1 provide additional information about variations in scoring. The total scores range from 541 to 935 and the distribution concentrates and peaks between 850 and 900. The distributions of the first four categories as shown in Figure 1 are skewed towards the maximum scores. The only exception is the *Social Responsibility* category, where the distribution peaks between 50 and 75 (out of 185) and scores show the largest variation. The empirical analysis in the next part will underscore the significance of high variability in *Social Responsibility* scores.

For additional perspective on the distribution of scores and what might be thought of as the “future payoff opportunity” for firms with respect to each indicator, we calculated the mean score for all firms as a percentage of total points possible with respect to each first- and second-level indicator. As shown in Figure 2, the mean scores for the first four first-level indicators are all above 96 per cent. The mean score for *Basic Data* is 99.34 per cent, potentially calling into question its usefulness in the Zhejiang CSCS, at least at this early stage of implementation. The mean score of first-level indicators is lowest for *Social Responsibility*, at 38.25 per cent. This suggests the largest future payoff to effort may be found in actions such as donations, volunteer work and obtaining awards from the government. Perhaps not coincidentally, these are precisely the areas of emphasis in President Xi Jinping’s current campaign to reduce income inequality, promote pro-social contributions by wealthy individuals and private corporations and increase loyalty to the Party.

Figure 2 also shows differences in mean scores in percentage terms for second-level indicators. Firms obtained the lowest mean scores for *Honesty Record* (58.29 per cent) – which adds points for government awards and redlisting – and *Charity* (1.25 per cent). *Charity* aggregates information on volunteer services in Party-sanctioned activities and donations to social organizations recognized by the party-state. Since 88 per cent of our sample firms are not SOEs, the low mean score for volunteer services probably results from low levels of participation in CCP-sanctioned activities. Looking forward, the opportunity to gain points in the *Social Responsibility* category by participating in Party-endorsed activities may nudge non-state firms to demonstrate greater fealty towards the CCP.

Focusing on the nuances of the scoring system in this way highlights the potential of the CSCS to tighten linkages between the corporate sector and the party-state and to modify corporate behaviour consistent with CCP policy objectives. To delve deeper into the operation and potential of the CSCS, we now turn to a more rigorous analysis of the early scores in Zhejiang province.

Empirical Analysis of Zhejiang Public Credit Scores

The CSCS is a first-of-its-kind comprehensive, data-based corporate scoring system implemented in the world’s second largest economy. Investigating the determinants of scores in the CSCS is therefore important as a matter of theory – to test the understanding of what market “trustworthiness” means in China – and practice – to provide insights into the potential effects of the CSCS on firm behaviour and economic performance. Previous literature on corporate governance and compliance as well as Chinese state capitalism suggest four factors that may be influential in determining a firm’s corporate social credit score: corporate governance, financial condition, state ownership and Party fealty, and political connections.

Corporate Governance: The CSCS is a means of evaluating a firm’s legal compliance and market conduct. Firms with better corporate governance may be expected to receive higher CSCS scores, owing to more robust compliance programmes or heightened board sensitivity to legal risk. Introducing independent directors to boards has been the long-standing focus of major corporate

36 Credit Zhejiang 2021.

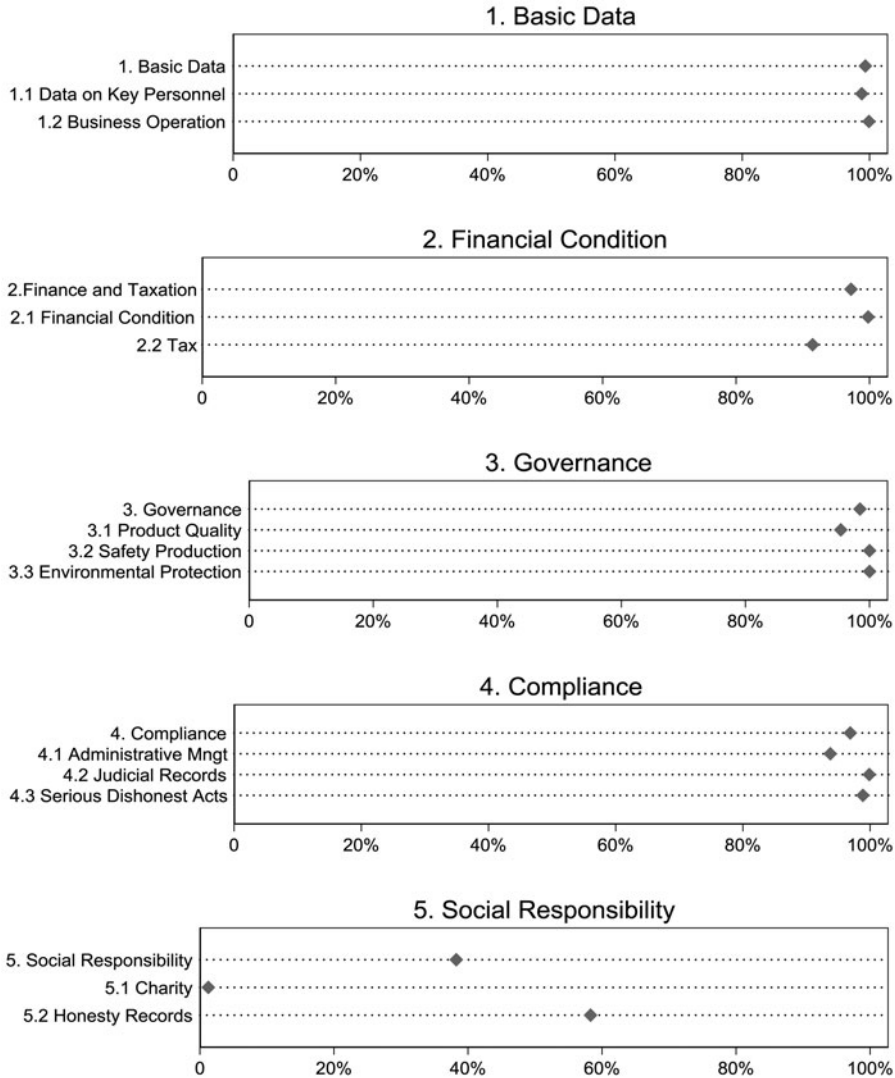


Figure 2. Mean Scores (Percentage) of First- and Second-level Indicators

governance reforms in Asia, and the percentage of independent directors on a company’s board is one of the key indicators used in corporate governance assessments globally. For our regression model, we use the percentage of independent directors on the board to proxy for the quality of corporate governance.

Financial Condition: Since the CSCS measures creditworthiness (or “trustworthiness”), a firm’s financial condition might also be expected to affect its social credit score. All else being equal, more highly leveraged and less profitable firms have a higher probability of defaulting on debts and potentially less capacity to satisfy judicial awards and administrative penalties. We use leverage ratio and return on assets to assess a firm’s financial condition.

State Ownership and Party Fealty: Notwithstanding the ostensibly neutral quality of the CSCS, the policy context in which it has been developed is obviously relevant to its implementation. As outlined above, the CSCS is part of a sweeping project to combine surveillance of regime threats

with enhancement of government functions. As such, it is plausible that direct connections to the party-state in the form of state equity ownership and overt signals of fealty to the CCP would be associated with higher social credit scores. We use a combination of variables to test the degree to which party-state linkages affect credit scores: (1) a firm's status as an SOE or privately owned enterprise (POE), (2) the state's percentage equity ownership in a firm, and (3) whether a firm has adopted charter amendments in response to a corporate "Party-building" (*dangjian* 党建) policy launched by the CCP in 2015.³⁷

Political Connections: Examining only formal linkages between enterprises and the party-state may be misleading. Previous literature has indicated that state equity ownership is an imperfect measure of the degree to which a firm accedes to government and Party policy, and the line between SOEs and POEs is blurred in China.³⁸ Political connections are important to private firm growth in China and serve as a form of protection for large Chinese firms in a weak-rule-of-law environment.³⁹ Prior studies have documented the link between political connections and a host of economic, legal and political outcomes, including the likelihood of listing shares on a Chinese stock exchange in an initial public offering,⁴⁰ accessing external finance⁴¹ and formally acceding to Party policy.⁴² Politically connected firms may obtain higher social credit scores because they are more likely to be redlisted or because they receive greater protection against adverse administrative and judicial actions than unconnected firms.

We ran ordinary least squares (OLS) regressions on public credit scores published by the Zhejiang government and measured the effect of the above independent variables on total scores. We estimated the following OLS regression specifications:

$$\begin{aligned} \text{Scores}_i = & \alpha_i + \beta_1 \text{PercentageIndependentDirectors}_i + \beta_2 \text{Leverage}_i + \beta_3 \text{ROA}_i + \beta_4 \text{SOE}_i \\ & + \beta_5 \text{PercentageStateShareholding}_i + \beta_6 \text{PartyBuildingReform}_i \\ & + \beta_7 \text{PoliticalConnections}_i + X_i + \varepsilon_i \end{aligned} \quad (1)$$

Scores are the public credit scores of the sample firms in Zhejiang derived from the comprehensive public credit assessment based on government records. X_i represents three control variables: *Firm Size* (log of a firm's total assets), *Firm Age* and *Book-to-Market Ratio*. The existing literature shows that larger firms are more likely to be politically connected; therefore, we include *Firm Size* as a control variable to test the effect of political connections on CSCS scores. We obtained data on the percentage of independent directors on the board (*Percentage Independent Directors*), *Leverage*, return on assets (*ROA*), *SOE* dummy and percentage of shares owned by the state and state-owned legal person shares (*Percentage State Shareholding*) from the China Stock Market and Accounting Research Database (CSMAR) and the Wind Economic Database (WIND). The *Independent Directors* variable is defined by Chinese securities law and regulations. The *Party-building Reform* variable evaluates the extent to which a firm is susceptible to CCP influence. Since 2015, the CCP has engaged in the Party-building reform, whereby SOEs are required to make their internal Party committee an official governance organization. Some non-SOEs have also voluntarily adopted

37 Lin and Milhaupt 2021, 193–194. In 2015, the Central Committee of the CCP and the State Council issued a document ("Guiding Opinions on Deepening State-owned Enterprise Reforms") to strengthen CCP leadership over SOEs by formalizing the legal position of Party cells in SOEs and their role in corporate governance. The policy requires SOEs to follow a model template of charter amendments to formalize and elevate the role of the CCP in their corporate governance. Some POEs also followed the policy, even though it was not directed at the private sector.

38 Milhaupt and Zheng 2015.

39 Ibid.

40 Lee, Qu and Shen 2019.

41 Firth et al. 2009.

42 Lin and Milhaupt 2021.

Party-building provisions in their corporate charters.⁴³ The dummy variable, which identifies firms that responded earlier to the CCP's call to formalize the role of the Party in their governance, equals one if a firm had amended its corporate charter to include Party-building provisions before 31 December 2018 and zero otherwise.⁴⁴ The *Political Connections* variable assesses whether any director or chief executive officer (CEO) of a firm is connected with the government or CCP, such that the individual may be able to exert political influence. To assess whether a given firm is politically connected, we follow existing literature and identify formal Party or government positions held by corporate executives.⁴⁵ We obtained data on the government or Party-related positions held by each director and CEO from CSMAR. There are six main levels in the Chinese bureaucracy: ministry (*bu* 部), department (*ju* 局), division (*chu* 处), section (*ke* 科), staff member (*keyuan* 科员) and clerk (*banshiyuan* 办事员). We coded a director or CEO as politically connected if he or she has served in certain government or Party positions at or above the division level. We then constructed a dummy variable, *Political Connections*, that equals one if a firm has at least one politically connected director or CEO, and zero otherwise. As a robustness check, we constructed two other measures: a dummy variable of directors (not including the CEO) having political connections and the percentage of directors having political connections (see the Online Supplementary Materials). Since the CSMAR data on top executive employment is only available up to March 2018, we only included 414 Zhejiang sample firms listed on stock exchanges before March 2018 in the regression analysis. To avoid the influence of outliers, we winsorized financial variables (*Leverage*, *ROA*, *Firm Size*, and *Book-to-Market Ratio*) at 0.5 per cent.

Table 2 shows the summary statistics of all variables. On average, 37 per cent of the directors in the sample firms are independent – just over the minimum threshold of one-third set by the China Securities Regulatory Commission. Only 15 per cent of the sample firms are SOEs and the average state shareholding in sample firms is only 1 per cent. This is consistent with the general perception that Zhejiang is a powerhouse for private and small and medium-sized enterprises. However, one-quarter of the firms have amended their corporate charters in compliance with the Party-building policy and 54 per cent of sample firms have at least one politically connected director or CEO. SOE status is (not surprisingly) correlated with state shareholding percentage, firm size, firm age and book-to-market ratio. However, all variables passed the generally accepted VIF test for multicollinearity (see Online Supplementary Material).

We ran regressions on the total scores and sub-scores of first-level indicators respectively. Table 3 shows the OLS regression results on the total scores. Models (1) to (4) examine the relationship between credit scores and corporate governance, financial condition, state ownership and Party fealty, and political connections indicators, respectively. Model (5) examines these factors together.

These results are contrary to some plausible conjectures based on the design and context of the CSCS and consistent with others. Contrary to expectations, the quality of corporate governance, at least as proxied by the percentage of independent directors, is not correlated with higher total scores. Nor are formal connections to the party-state in the form of status as an SOE, state equity ownership, or signalling of fealty to the CCP. Although *SOE* is positively correlated with scores in Model (3), the significance of the result disappears when controlling for other variables in Model (5). Consistent with expectations, leverage is negatively associated with scores as it may be associated with higher rates of default and non-performance of other obligations which are a major focus of the CSCS. The result remains after controlling for other variables in Model (5) (significant at the 5 per cent level in both models). A 1 per cent increase in leverage ratio decreases scores by 50.785. By contrast, profitability is not significantly associated with higher scores. This may be a natural result of a system designed to measure legal compliance rather than financial performance. But this result may raise questions about the impact of the CSCS on the Chinese economy: will it lead corporate managers to focus on maximizing scores in ways that harm their financial performance?

43 Ibid.

44 Ibid., 196–199.

45 Lee, Qu and Shen 2019; Haveman et al. 2017.

Table 2. Summary Statistics

	N	Mean	S.D.	Min	Median	Max
Scores	414	862.40	49.30	541.00	875.00	935.00
Percentage Independent Directors	414	0.37	0.05	0.29	0.33	0.60
Leverage	414	0.43	0.21	0.06	0.41	1.46
ROA	414	0.03	0.14	-1.13	0.04	0.46
SOE	414	0.15	0.36	0.00	0.00	1.00
Percentage State Shareholding	414	0.01	0.04	0.00	0.00	0.59
Party-building Reform	414	0.25	0.43	0.00	0.00	1.00
Political Connections	414	0.54	0.50	0.00	1.00	1.00
Firm Size	414	22.25	1.25	19.75	22.14	27.79
Firm Age	414	21.73	5.10	11.00	21.00	66.00
Book-to-Market	414	0.61	0.26	0.07	0.60	1.29

Most importantly, consistent with findings in other areas of the Chinese economy, political connections matter in the CSCS: *Political Connections* is significantly associated with higher scores in Model (4) (significant at the 5 per cent level) and the result remains robust after controlling for other variables in Model (5). (Also consistent with prior literature, a politically connected private firm may have more influence with the state than an SOE whose only connection to the state is via equity ownership.) In unreported regressions, the positive correlation holds when using a dummy variable of directors (without the CEO) having political connections (significant at the 5 per cent level) and the percentage of directors having political connections (significant at the 10 per cent level) (see Online Supplementary Material). Despite the fact that “trustworthiness” has no overt political connotations in the CSCS, it is significant (if not surprising) that politically connected firms have advantages in a scoring system designed by the party-state to serve its interests. As demonstrated in the summary statistics discussed above, the payoff to effort is high under the *Social Responsibility* indicator, where scores can be boosted by participating in activities endorsed in CCP policy and garnering awards from the government.

To obtain a finer-grained understanding of the association between CSCS scores and our variables of interest, we ran a regression on the sub-scores in each first-level indicator.⁴⁶ Table 4 shows the regression results. SOEs score higher under the *Basic Data* indicator, which measures the trustworthiness of key corporate personnel and the operation of a business. *Percentage of State Shareholding* is significantly correlated with scores in the *Compliance* indicator. A 1 per cent increase in the percentage of state shareholding increases *Compliance* scores by 53.073. Even though party-state control variables are not correlated with total scores, the regression results in sub-scores suggest that firms with formal linkages to the party-state have moderately better compliance records. (This may be due to superior compliance functions in firms with more state shareholding, or the difficulty of sanctioning firms connected to the state.) *Percentage Independent Directors* is also associated with higher *Compliance* scores. A 1 per cent increase in the percentage of independent directors increases *Compliance* scores by 58.167, statistically significant at the 5 per cent level. (More independent boards may produce superior compliance records, consistent with our conjecture above. Less plausibly, firms with good compliance programmes require higher percentages of independent directors.) Amplifying the results in Table 3, *Leverage* is negatively correlated with each of the *Basic Data*, *Finance and Taxation* and *Compliance* categories, suggesting that

46 Sub-scores refer to the separate scores in each of the five broad scoring categories. See Appendix.

Table 3. OLS Regression on the Determinants of Corporate Social Credit Scores

	(1)	(2)	(3)	(4)	(5)
Percentage Independent Directors	52.584				54.039
	(51.028)				(46.495)
Leverage		-51.494**			-50.785**
		(21.083)			(20.922)
ROA		10.477			8.845
		(31.785)			(30.920)
SOE			12.855*		11.011
			(7.574)		(7.217)
Percentage State Shareholding			44.362		56.309
			(43.671)		(48.146)
Party-building Reform			-6.634		-7.621
			(7.311)		(7.125)
Political Connections				9.625**	10.515**
				(4.799)	(4.831)
Firm Size	8.922***	10.296***	8.454***	8.353***	9.928***
	(2.102)	(2.484)	(2.025)	(2.046)	(2.540)
Firm Age	0.474	0.197	0.407	0.447	0.235
	(0.475)	(0.426)	(0.476)	(0.466)	(0.433)
Book-to-Market	-15.219	-14.345	-16.402	-16.039	-16.462
	(11.084)	(10.998)	(11.132)	(11.144)	(10.958)
Constant	579.268***	606.856***	606.372***	609.336***	584.304***
	(65.787)	(52.269)	(52.883)	(52.484)	(63.327)
Observations	414	414	414	414	414
R ²	0.117	0.160	0.122	0.123	0.178

Notes: Robust standard errors in parentheses. All models include industry and city fixed effects.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

the overall scores of more heavily indebted firms are dragged down by a range of credit history and compliance problems. ROA is again uncorrelated with scores.

Consistent with the analysis above, *Political Connections* is positively correlated *only* with the sub-score for *Social Responsibility*. Thus, our findings indicate that politically connected firms receive higher total CSCS scores by accumulating soft merits from party-state organs; we find no evidence that such firms have better compliance records or other indications of superior “trustworthiness” as market actors.⁴⁷ Whether the high payoff potential of political connections in the *Social Responsibility* category is a bug or a design feature of the CSCS remains to be seen. It will be important to analyze whether political connectedness is a channel for higher scores in other provinces and throughout the CSCS over time.

47 In fact, firms following the CCP’s Party-building reform policy receive significantly lower scores in *Finance and Taxation*. This may indicate that companies in arrears on debts and taxes signal fealty to the Party as a form of protection from adverse actions by creditors or regulators.

Table 4. OLS Regression on the Determinants of First-level Sub-scores

	(1)	(2)	(3)	(4)	(5)
	Basic Data	Finance and Taxation	Governance	Compliance	Social Responsibility
Percentage Independent Directors	4.146 (4.536)	-1.335 (14.368)	-3.609 (4.855)	58.167** (29.201)	-3.331 (25.852)
Leverage	-4.217* (2.329)	-12.471*** (4.438)	-0.131 (1.264)	-29.492** (12.944)	-4.474 (8.550)
ROA	1.281 (3.256)	2.974 (7.188)	2.554 (4.312)	-0.995 (19.273)	3.032 (10.994)
SOE	0.740* (0.433)	2.086 (1.793)	-0.351 (1.166)	6.387 (5.203)	2.149 (4.051)
Percentage State Shareholding	1.511 (2.166)	15.592 (18.630)	-8.599 (9.796)	53.073* (30.569)	-5.268 (18.975)
Party-building Reform	-0.374 (0.658)	-3.784* (1.985)	0.175 (0.721)	-5.505 (5.101)	1.868 (3.745)
Political Connections	0.426 (0.469)	0.448 (1.229)	0.449 (0.559)	4.669 (3.156)	4.523* (2.661)
Firm Size	0.367* (0.203)	-0.342 (0.598)	0.031 (0.223)	4.640*** (1.605)	5.232*** (1.405)
Firm Age	-0.006 (0.043)	-0.071 (0.113)	0.008 (0.077)	-0.211 (0.302)	0.516* (0.271)
Book-to-Market	-1.984 (1.413)	-3.594 (2.649)	0.961 (1.224)	-8.624 (6.487)	-3.221 (6.529)
Constant	72.235*** (4.228)	193.566*** (16.774)	90.556*** (5.205)	291.553*** (40.088)	-63.607** (31.269)
Observations	414	414	414	414	414
R ²	0.095	0.191	0.068	0.156	0.168

Notes: Robust standard errors in parentheses. All models include industry and city fixed effects.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

To test the robustness of our results, we conducted several alternative (unreported) regressions. First, to address the concern that scores are skewed towards the high end, we ran an OLS regression against the log of the scores as the dependent variable and found results similar to those reported in Table 3. Second, since the scores are capped at 1,000 points, we ran additional Tobit and Fractional Response Logit regressions to address the concern that the dependent variables are possibly censored or measured within a bounded range. The results of these regressions are similar to the OLS results, with *Leverage* negatively and *Political Connections* positively correlated with the scores (see the Online Supplementary Materials).

Implications and Questions

The long-standing objective of ensuring market behaviour deemed trustworthy by the party-state is an increasingly prominent feature of Chinese state capitalism. As enormous wealth and data have

been accumulated by private firms outside the direct control of the state, demands for political conformity in corporate governance and regulatory compliance have increased. The most recent manifestations of this trend are the government's regulatory crackdown on many of China's leading big data firms and the state's investment in "special management shares" (*teshu guanli gu* 特殊管理股) with veto rights and board representation in major internet content companies.

This paper provides early evidence suggesting that the CSCS, as a data-driven system of evaluation, rewards and punishments for every company in the country, is not simply a credit rating system or law enforcement mechanism, as it has generally been portrayed. Rather, the CSCS is a policy channelling⁴⁸ tool of potentially far-reaching significance. As CCP policy priorities change over time, the CSCS scoring system can be readily adjusted by local governments to incentivize and reward policy compliance and political conformity. Consider, for example, the potential of the "social responsibility" category to shape corporate behaviour going forward. Our findings indicate a high payoff potential in the CSCS scoring system for corporate managers who prioritize CCP policy compliance and local government ingratiation over profit maximization.⁴⁹

To be sure, the scoring platform's malleability could potentially be a strength as well as a hazard, producing salutary incentive effects on corporate behaviour. For example, compliance with additional regulatory regimes, such as those for the capital and labour markets, could be subject to scoring. Perhaps most promising would be the incorporation of meaningful environmental, social and governance (ESG) metrics into the CSCS scoring system. In the best possible scenario, the CSCS will induce more scrupulous regulatory compliance and corporate creditworthiness, generating economic benefits for the country as a whole, consistent with one academic hypothesis.⁵⁰

But several more problematic potential consequences of the CSCS are also apparent. For example, scoring systems may be corrupted by powerfully connected companies, or by local government officials in order to raise the scores of local companies (and thereby enhance their own career progression). Another possibility is that the CSCS will be used as a means of ensuring that all market actors comply with Beijing's prevailing industrial policy and political agenda. Even if the CSCS is not taken to an Orwellian extreme, it could prompt a revival of the impulse towards central planning, as the system harnesses the technological means to overcome many of the information and incentive problems that doomed this approach to economic management long ago. China's CSCS strategists will need to take care, lest their scoring systems nudge Chinese companies into competitive dead ends or serve as an unproductive distraction to managers. Finally, if the benefits of political connections via the "social responsibility" channel are replicated throughout the country, foreign registered firms may face additional disadvantages in Chinese markets.

Our results, based on the initial scores in a single province, have clear limitations; a more complete picture of the CSCS must await publication and analysis of scores in other provinces and accumulation of data over time. It is too early to determine exactly how effectively the CSCS will be implemented nationwide, let alone how it will evolve over time and the role it will play in the Chinese political economy. As more data become available, future research can be done to evaluate how corporations respond to this form of monitoring and evaluation. For example, how will firms respond to blacklisting – is it a death knell or an impetus to reform? Will companies game the CSCS system by "managing what gets measured" so as to obtain "excellent" ratings? How effectively will

48 Gilson and Milhaupt (2022) use the term "policy channelling" to denote the state's regulation of corporations to pursue industrial and social policy goals.

49 Some signs of this behaviour are already appearing in China, with firms and their wealthy founders promising large donations to social causes, consistent with current CCP emphasis on "common prosperity" (*gongtong fuyu* 共同富裕). See, e.g., Naoki Matsuda and Iori Kawate, "China's elite scramble for path to Xi's 'common prosperity'," *Nikkei Asia*, 2 September 2021, <https://asia.nikkei.com/Business/China-tech/China-s-elite-scramble-for-path-to-Xi-s-common-prosperity>. Accessed 22 January 2022.

50 See Krause and Fischer 2020 (hypothesizing that the social credit system will produce economic benefits by increasing trust among Chinese market actors).

CSCS scores predict significant corporate outcomes, such as bankruptcies or compliance-related scandals?

Despite the early stage of our research, we believe analysis of the first available CSCS scores has raised some meaningful questions and opened new avenues of inquiry at what may be the dawn of Chinese surveillance state capitalism.

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Appendix: Summary of Zhejiang Province Indicators for Public Credit Evaluation of Enterprises

First-level Indicator	Weight	Second-level Indicator	Weight	Third-level Indicator	Weight
Basic Data	80	Data on Key Personnel	40	Serious Dishonest Key Personnel	20
				Key Personnel Failed to Satisfy a Court Judgment	20
		Business Operation	40	Abnormal Operations	20
				Abnormal Taxpayer	20
Finance and Taxation	195	Financial Condition	135	Failure to Satisfy a Court Judgment Relating to Financing	50
				Criminal Liability Relating to Financing	60
				Debt Evasion	15
				Registration of Equity	10
		Tax	60	Social Insurance Payment	30
				Tax payment	30
Governance	90	Product Quality	30	Supervision and Inspection	30
		Production Safety	30	Production Safety Accident and Potential Hazard	30
		Environmental Protection	30	Environmental Accident	30
Compliance	450	Administrative Management	200	Administrative Penalty	90
				Administrative Enforcement	60
				Administrative Commitment	20
				Other Non-compliance Records	30
		Judicial Records	130	Failure to Satisfy a Court Judgment	50
				Other Criminal Records	60
				Frivolous Litigation	20
Serious Dishonest Acts	120	List of Enterprises with Serious Dishonest Acts	120		
Social Responsibility	185	Charity	65	Volunteer Service	30
				Donations	35
		Honesty Records	120	Redlist	60
				Honours and Awards	60

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