A review of China-related accounting research in the past 25 years

Clive Lennox
Leventhal School of Accounting
University of Southern California

Joanna S. Wu
Simon Business School
University of Rochester

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ABSTRACT

The past 25 years have seen an exponential growth in the number of China studies in the leading accounting journals. The rise in China-related research mirrors the country’s increased importance on the global stage and a growing appreciation of the economic importance of Chinese institutions. We organize our review of the China literature around three central themes: 1) political and regulatory institutions, 2) China’s relationships with foreign investors, and 3) the availability of novel data and regulatory shocks. The former two themes address research questions that are more China-centric, while the third exploits the China setting to examine questions that are more universal. We highlight the contributions that China studies have made to the broader accounting literature, the limitations of the current literature, and we offer suggestions for future research directions.

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Contact information: clennox@marshall.usc.edu; joanna.wu@simon.rochester.edu.
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1. Introduction

China has experienced extraordinary growth since launching its program of economic reforms in 1978. Its gross domestic product (GDP) has grown from $294 billion in 1978 to $11,538 billion in 2019 (both in constant 2010 U.S. dollars), producing an average growth rate of over 9% per year. China has grown faster than a variety of benchmark countries, including the major developed economies in North America and Europe, other major Asian economies, former socialist economies, as well as other major developing countries (see Figure 1). China has benefited from dramatic market-oriented reforms over the past four decades although many aspects of its formal institutions remain relatively underdeveloped (e.g., Allen, Qian, and Qian, 2005).

Mirroring China’s high levels of growth and a growing appreciation of the economic importance of Chinese institutions, the past 25 years have seen a significant increase in the number of China-related publications in scholarly accounting journals. We survey the extant China accounting literature with the following objectives in mind. First, we want to help China and non-China researchers better understand the strengths and weaknesses of China studies and their contributions to the broader accounting literature. Second, we want to help non-China researchers and PhD students better understand the distinct institutional features of the China setting and to see how accounting researchers have capitalized on those features in their studies.

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1 China’s economic growth has produced large society-wide benefits, lifting hundreds of millions of people out of poverty. In 1990, 66% of China’s population lived on less than $1.90 per day (based on 2011 prices), compared to 0.5% in 2016. The average life expectancy rose from 66 years in 1978 to 77 years in 2018 (the U.S. life expectancy rose from 73 to 79 during the same period).
2 China ranks 2nd in the world in total GDP and in total stock market capitalization (2019 data). Meanwhile, China ranks 66th in the world on property rights (2020), 97th on the rule of law (2018), and 79th on perceived corruption (2019) (rankings are collected from theGlobalEconomy.com and can reflect the ranking providers’ subjective assessments). Allen, Qian, and Qian (2005) suggest that China relies on informal institutions, such as relationship-based networks, as alternative governance and financing mechanisms to support its fast economic growth.
3 For the purpose of our survey, we define China research as studies in which mainland China serves as the chief research setting and data origin. This excludes cross-country studies with China being one of the sample jurisdictions.
Finally, we identify numerous opportunities for future research to further exploit the institutional features of the China setting.

Now is an opportune time to assess the state of the China accounting literature. So far 83 China studies have been published (or are forthcoming) in five leading accounting journals: the *Journal of Accounting and Economics*, *Journal of Accounting Research*, *The Accounting Review*, *Contemporary Accounting Research*, and the *Review of Accounting Studies*. Emphasizing the timeliness of our survey, the number of China studies in these five journals has increased most dramatically in recent years, with 74 (89%) studies being published since 2010. In addition to the above five journals, our survey includes articles from other disciplines (primarily economics and finance) where we regard the articles as relevant to accounting researchers. We also reference working papers and articles in accounting outlets outside of the five journals mentioned above, although our coverage of those papers is not intended to be comprehensive.

A central theme of the literature is the key role played by China’s institutions. Institutions are humanly devised constraints that structure economic behavior (e.g., North 1994). Coase (1960) first introduced the notion that institutions matter because we do not live in a frictionless world and there exist transaction costs. Institutions comprise formal constraints such as rules, laws, and standards as well as enforcement agencies, such as securities regulators and the judicial system.

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4 China-related accounting studies have had a meaningful impact on subsequent research, based on their annual citation counts. We calculate the annual citation counts for 71 China studies and the much larger sample of 4,651 non-China studies in the five leading accounting journals between 1997 and 2020. We start in 1997 because this was the first year in which a China study was published in one of these five journals. The China studies have a mean (median) annual citation count of 9.00 (7.33). The non-China articles have a mean (median) citation count of 5.86 (3.00). The average (median) China paper is in the 68 (77) percentile, or top 32% (23%), of the annual citation count distribution. (Citation data are collected from the Scopus database in May 2021. Annual citation count for each paper is calculated as the total cites to the paper since publication divided by the number of years since publication.)

5 Given that our focus is on studies that are relevant to accounting researchers, we do not attempt to comprehensively review the China-related literatures in other disciplines such as economics, finance, and politics. For those interested in learning more about China’s economic development and political environment, we refer the reader to insightful discussions by Xu (2011), Huang (2012), Zhu (2012), Naughton (2017), Wei, Xie, and Zhang (2017), Li, Loyalka, Rozelle, and Wu (2017), Glaeser, Huang, Ma, and Shleifer (2017), and Qin, Stromberg, and Wu (2017), among others.
North (1994)’s observation that political institutions underpin economic institutions is especially salient in China as the government’s influence is ubiquitous in the economy. Political economy thus stands out as a prominent institutional feature in China. Institutions also comprise informal forces such as culture, norms, and conventions. Personal connections (guanxi) are a key characteristic of the Chinese culture and constitute an important part of China’s informal institutions. China studies encompass many different research objectives and topics but a central theme that connects them all is the key role of institutions. Some studies in our survey are deeply connected to China’s political and regulatory institutions, while others emphasize China’s institutions that shape its relationships with foreign investors. Some studies exploit China’s unique institutional features to capitalize upon novel data or plausibly-exogenous regulatory shocks that can aid in examining new research questions and drawing stronger causal inferences.

In contrast to most literature surveys, which focus on one specific research area, our survey centers around a single country and reviews studies covering a large number of topics. The broadness of the China-related accounting literature means that the studies do not naturally fall under a single unified theoretical framework. This has led us to organize the literature around three inter-related themes: i) China’s political and regulatory institutions (Section 2), ii) China’s relationships with foreign investors (Section 3), and iii) China’s novel data and unique regulatory shocks (Section 4). We find that many topic areas are still at a fledging stage and thus are lightly populated. We endeavor to add depth to our discussions by going into detail on studies that are particularly noteworthy, by making our own observations and criticisms, by connecting the China studies to the broader accounting literature, and by offering suggestions for future research.

Section 2 emphasizes the Chinese government’s key role in the economy. While China has come a long way in transforming its economy from a command-based model to a more market-
driven system, its newly emerging institutions are, by definition, exploratory and experimental. Some reforms have proved successful, whereas others have had unintended negative consequences that are worthy of study and from which to take valuable lessons. The government continues to exert a strong influence over many areas of the economy in its attempts to direct economic development while at the same time maintaining social stability. Tensions between government intervention and market forces have therefore been a central feature of China’s economic development. At the risk of over-simplifying, there are two broad opposing views on the efficacy and desirability of government institutions. The positive (“helping hand”) view emphasizes the government’s ability to address market failures that would otherwise impede financial development and economic growth. On the other hand, the negative (“grabbing hand”) view sees government involvement as a means for the political elite to direct resources to themselves for financial and political gains. The Chinese setting (perhaps unsurprisingly) offers supporting evidence on both fronts. China’s bureaucratic system has contributed to economic growth by providing government officials with powerful career-based incentives (e.g., Li and Zhou, 2005; Chen, Li and Zhou, 2005), but the highly politicized system has also led to problems of cronyism and corruption (e.g., Cai, Henderson, and Zhang, 2013; Fang, Gu, and Zhou, 2019; Agarwal, Qian, Seru, and Zhang, 2020). Section 2 looks at the many ways in which China’s government-centric institutions affect financial reporting, through stock market regulations, state ownership, political connections, and government information control.

The studies in Section 2 are deeply connected to China’s institutional features. It is natural to ask whether such studies can inform accounting research in general. We offer a few thoughts in this regard. First, China’s distinctive institutional features have the potential to add new dimensions to our understanding of economic phenomena and to enrich the development and testing of economic theories. As an illustration, recent theoretical work by Schantl and
Wagenhofer (2020) shows that the strength of the private litigation regime fundamentally alters the nature of the relationship between financial misreporting and public enforcement. Consequently, empirical regularities observed in a strong private litigation regime such as the U.S. may not extend to a weak litigation regime such as China. It takes a diverse collection of institutional settings, rather than one setting alone (e.g., the U.S.), to paint a more complete picture of an underlying economic phenomenon. Viewed from this perspective, the distinctiveness of the China setting can be seen as a strength to scientific research on accounting topics. Second, it is worth bearing in mind that there are some similarities between China’s institutional features and those of other countries. For example, state ownership is prevalent around the world and also exists in the U.S., especially following the financial crisis of 2008-2009. Third, China’s immense size means that its domestic affairs can have significant spillover effects on other countries. A case in point is how China’s domestic stock market regulations have spilled over to other countries’ stock markets, including the U.S. stock market, through their impact on the overseas listings of Chinese firms. Finally, China’s economic significance means that it is a setting that is increasingly difficult to overlook, and thus is deserving of attention in its own right.

Section 3 considers China’s relationships with foreign investors. In 1978, China introduced a policy of opening up to global trade and foreign investment. During the next four decades, China emerged from economic isolation, from having had zero Foreign Direct Investment (FDI) and negligible exports and imports in 1978 to becoming the world’s largest (second largest) exporter (importer) with $2,641 billion ($2,476 billion) of imports (exports) in 2019. China ranks second, after the U.S., as a destination for FDI, receiving $156 billion of FDI in 2019. Against this background, Section 3 surveys the accounting research on foreign investment in Chinese firms. Specifically, we look at two channels: 1) investment in China’s domestically-listed firms and 2)
investment in China’s overseas-listed firms. The first strand of research considers the sources of information asymmetries between domestic and foreign investors and the effects of information asymmetries on price disparities between the shares of foreign and domestic investors.\textsuperscript{6} The second strand of research examines the quality of U.S.-listed Chinese firms in light of the accounting scandals that have afflicted many of them. Collectively, the research in Section 3 highlights tradeoffs between the rewards promised by China’s fast economic growth and the risks associated with the country’s opaque information environment and weak investor protection.

Section 4 describes how accounting researchers have exploited China’s novel data and unique regulatory shocks to test new research questions and to provide stronger causal inferences. China’s institutions have helped make the country a rich source of novel data. For example, China’s disclosure rules allow certain variables to be observed that are not (or have not been) observable in other countries (e.g., data are publicly available on the trading commission fees earned by brokerage firms and the characteristics of a company’s signatory auditors). China’s enforcement agencies have also been a source of valuable proprietary data (e.g., they have provided proprietary data on audit adjustments and tax non-compliance). Moreover, China’s regulatory agencies have passed numerous reforms, that have allowed researchers to test new research questions and provide stronger causal inferences. Our survey highlights the challenges that researchers face when exploiting China’s novel data and regulatory shocks. For instance, researchers need to take extra care to pinpoint the effects of the specific regulations they are interested in investigating because the political and economic factors that prompt the government

\textsuperscript{6} Listed firms in China have segmented share structures for the shares owned by domestic and foreign investors and there are strict trading restrictions between domestic and foreign shares, which limit arbitrage opportunities across the share classes.
to pass a new regulation can drive other regulations as part of an overall package of reforms. Major reform initiatives often come in close succession, and sometimes in conjunction, with other reforms, making it difficult for researchers to identify which reform is driving the observed outcome variables. In addition, the regulatory shocks typically do not result in a random assignment of observations to treatment and control groups. Even more significant, most regulatory reforms are imposed on every listed firm, which means that researchers generally lack a natural control group of unaffected listed firms.

Questions about generalizability frequently arise for the studies in Section 4 because such studies aim to address broad research questions that are not specific to the China setting. We devote a subsection (Section 4.6.2) to the generalizability of the studies in Section 4. We argue that researchers need to consider whether there are theoretical reasons to expect the postulated relationship between Y and X to be contingent upon a country’s institutional features. We caution against a blanket labeling of all China studies as either generalizable or lacking generalizability and we propose ways to mitigate potential concerns about generalizability.

Throughout the survey, we highlight that the China literature has not yet matured and, consequently, there are many opportunities for future research. We weave our identified opportunities for future research throughout Sections 2 to 4 in order to tie them to the three themes of our survey. We also identify numerous areas of research that have yet to receive any significant attention in the existing literature. We provide concluding remarks in Section 5.

2. Political and regulatory institutions

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7 The Appendix presents a timeline of important developments in China’s economic reform program since 1978, with the reforms classified into those pertaining to the real economy, the stock market, and financial reporting. Due to the constantly evolving nature of government policies, we focus on what we believe are the major milestones and the most relevant policies to our survey.
China has come a long way in transforming its economy from the command-based model of forty years ago to a more market-driven system. However, the government continues to exert a strong influence over the economy, perhaps more so than any other middle- or high-income country in the world (Naughton, 2017). Political economy is a defining attribute of Chinese institutions, which encompass formal constraints such as rules, laws, and standards as well as enforcement mechanisms such as securities regulators and the judicial system, and informal norms of behavior such as social connections. China’s government uses a wide array of rules and regulations to steer the economy. The government also controls large swaths of the economy through direct state ownership in business enterprises. Furthermore, political connections are vital for doing business in China because the government controls critical resources, including financial capital (for example, bank loans) and physical capital (for instance, land, of which the state holds exclusive ownership). In addition, the government exercises significant control over the flow of information. We organize Section 2 to reflect these various channels of government influence. Specifically, Section 2.1 surveys studies that speak to the interactions between government intervention and market forces. Section 2.2 reviews studies that shed light on the corporate governance and financial reporting practices of state-owned enterprises (SOEs). Section 2.3 surveys the research on political connections. Section 2.4 discusses studies related to the government’s control of information. Finally, in Section 2.5 we comment on the relevance and generalizability of the findings in Section 2 to non-China settings.

2.1. Government intervention and market forces

This section examines the interplay between government regulation, standards, and market forces. Section 2.1.1 focuses on the regulations and market forces related to corporate
financial reporting and auditing. Section 2.1.2 examines regulatory oversight of stock market listings.

2.1.1. Regulations and market forces related to corporate financial reporting and auditing

Prior to 1978, China’s economy was under the government’s central command. Soviet-style fund accounting methods were used to keep records on the funds granted to SOEs and their assets. There was no demand for external financial reporting because the government was the sole owner of enterprises and it could access information about them as and when it needed to. Economic reforms since 1978, including the privatization of the SOEs, ignited a demand from external shareholders for reliable financial reporting. To meet this market demand, the government promulgated new accounting and auditing standards. Several developments are particularly significant in this regard. In 1993, the Ministry of Finance (MOF) introduced Accounting Standards for Business Enterprises (ASBE) based on the International Accounting Standards (IAS). Two years later, the MOF issued new auditing standards modeled after the International Standards on Auditing. In 2006, the MOF promulgated the New Accounting Standards for Business Enterprises (New ASBE), which the International Accounting Standards Board (IASB) has recognized as being in substantial convergence with the International Financial Reporting Standards (IFRS). Thus, China’s accounting and auditing standards are now closely aligned with international standards (e.g., Zhang, 2020).

A large non-China literature questions the efficacy of “improving” standards without stronger enforcement and increased market incentives for the preparers and auditors of financial statements (e.g., Ball, Kothari, and Robin, 2000; Ball, Robin, and Wu, 2003; Leuz, Nanda, and Wysocki, 2003; Bushman, Piotroski, and Smith, 2004; Bushman and Piotroksi, 2006; Daske, Hail, Leuz, and Verdi, 2008; Daske, Hail, and Leuz, 2013; Christensen, Hail, and Leuz, 2013). China
generally lacks the institutional infrastructure to support a high-quality accounting information environment (e.g., Ball, 2001; Piotroski and Wong, 2012). Some of the major impediments include weak legal protection of minority shareholders, widespread state ownership in listed firms, state control of banks and financial intermediaries, and the cultural preference for relationship contracting over arms-length transactions. Notwithstanding the introduction of new standards, these cultural, political, and economic forces dampen the demand and supply of accounting information.

In the following subsections, we look at how international accounting and auditing standards function within China’s weak institutional environment (Section 2.1.1.1). We then discuss auditors’ incentives to supply competent audits of financial statements (Section 2.1.1.2).

### 2.1.1.1. International accounting and auditing standards in China’s weak institutional environment

Ball, Robin, and Wu (2000) study the impact of China’s introduction of IAS-based accounting standards (ASBE) in 1993 on financial reporting quality, defined as the asymmetric timeliness of earnings in incorporating economic losses versus economic gains (Basu, 1997). Consistent with local institutional forces prevailing over international standards, Ball, Robin, and Wu (2000) find the ASBE standards modelled on IAS did not result in timelier recognition of economic losses in China. One potential explanation for this result is that the ASBE excluded certain conservative provisions in IAS, such as the lower-of-cost-or-market rule for inventories and the impairment standard for non-current assets. However, the study’s results for AB-share firms cast doubt on this explanation because these firms’ IAS-based accounting incomes also exhibit no accounting conservatism, similar to their domestic ASBE-based incomes.8 The evidence

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8 AB-share firms have a dual-class share structure where A-(B-) shares are traded mostly by domestic (foreign) investors. During their sample period, AB-share firms were required to report both domestic ASBE-based financials to
that IAS-based accounting income lacks conservatism despite the conservative accounting rules embedded within IAS is consistent with a low demand for timely loss recognition in China.

As noted in Dechow, Ge, and Schrand (2010), the concept of financial reporting quality is not clearly defined in the literature and is often context specific. The institutional context of China leaves open the possibility that low conservatism might serve a productive purpose. For example, earlier versions of the Chinese accounting standards eschewed conservatism provisions in part to safeguard state assets.\(^9\) Thus, it is possible that firms’ forbearance on asset write offs helps to deter asset plundering by managers and other employees. Note that this possibility does not negate, in fact it supports, the central thesis in Ball, Robin, and Wu (2000) regarding the significance of institutional forces in shaping financial reporting practices. At the same time, it reflects the challenges in clearly defining financial reporting quality, especially across different institutional contexts where the desirability of certain accounting attributes may vary.

DeFond, Wong, and Li (2000) study the introduction of new auditing standards in 1995. They find the new standards, combined with tough enforcement, triggered a nine-fold increase in the issuance of modified (or qualified) audit opinions, which the authors interpret as evidence of improved auditor independence.\(^10\) The increase was disproportionately driven by the larger audit firms but these audit firms subsequently suffered significant falls in their market shares, suggesting a flight from audit quality. DeFond, Wong, and Li (2000) conclude that improved local A-share investors and IAS-based accounting numbers to foreign B-share investors. The comparison therefore uses a firm-year observation as its own control, which mitigates concerns about correlated omitted variables.\(^9\) This is because it is easier for a manager to conceal the theft of an asset if the asset has been fully impaired.\(^10\) The new auditing standards included standards related to audit reporting in addition to auditor independence. Therefore, we would expect to see an increase in modified (or qualified) opinions even without an increase in auditor independence.
standards are not sufficient, on their own, to foster high quality auditing because China’s weak institutional environment provides only a low demand for high quality auditing.\textsuperscript{11}

Ke, Lennox, and Xin (2015) examine how the different institutional environments of Hong Kong and mainland China affect audit quality. The study captures differences in the institutional environments between Hong Kong and the mainland by contrasting the quality of A-share (mainland) audits between pure A-share companies, AH-share companies, and AB-share companies. Pure A-share companies prepare a single set of audited financial statements for domestic mainland investors. AH-share companies prepare two sets of audited financial statements: one set is for the domestic A-share investors prepared under local GAAP and the other set is for the foreign H-share investors in Hong Kong prepared under international standards. AB-share companies also prepare two sets of audited financial statements (one set is for the domestic A-share investors and the other set is for the foreign B-share investors), but both the A and B shares are listed exclusively on the mainland. Using unclean audit opinions, audit fees, auditor experience, and accrual quality as proxies for audit quality, the authors find the quality of A-share audits is higher at AH-share companies than at pure A-share or AB-share companies, with the latter two (A-share and AB-share companies) exhibiting no difference in their A-share audit quality. The study’s findings suggest a positive audit quality spillover from H-share to A-share audits at AH-share companies due to Hong Kong’s stronger institutional environment. The lack of a positive audit quality spillover from B-share to A-share audits at AB-share firms suggests that international standards, foreign investors, and international auditors

\textsuperscript{11} Interestingly, the flight from audit quality was driven by the auditor choices of newly listed firms rather than existing clients. Because of substantial costs associated with auditor switches, it is reasonable to expect a less pronounced flight from quality effect among existing clients. However, the study’s finding of no flight from audit quality by existing clients would seem to imply prohibitively high switching costs for these firms, which is worth further investigation.
alone are not sufficient to produce high quality auditing when companies operate within mainland China’s weak institutional environment.

In 2007, China introduced a new set of accounting standards (New ASBE), which were largely in alignment with IFRS. There is a vast literature examining the consequences of IFRS adoption (see De George, Li, and Shivakumar (2016) for a review). Prior studies have raised concerns that introducing IFRS could result in adverse unintended consequences. For example, Ball, Li, and Shivakumar (2015) conclude that the fair value provisions in IFRS reduce the contractibility of accounting numbers. China studies have a unique opportunity to contribute to this literature because China’s institutional features pose particular challenges for IFRS implementation. He, Wong, and Young (2012a) find that the fair value reporting provisions in IFRS are incompatible with China’s institutional environment due to the lack of active markets for nonfinancial assets and the prevalence of related party transactions. Thus, the introduction of IFRS gave Chinese firms new incentives and fresh opportunities to engage in earnings management. Luo, Shao and Zhang (2018) similarly document adverse effects of IFRS alignment. They find evidence of greater earning management associated with China’s convergence to IFRS in 2007, when investment income moved from below the line of operating income to above the line. The study finds a positive (negative) relation between investment income and core earnings before (after) 2007, suggesting that investment income is used to smooth out the fluctuations in core earnings after the accounting change. Furthermore, there is evidence of investor mispricing of investment income in the IFRS regime but not in the pre-IFRS regime, suggesting that investors do not fully unravel the new form of earnings management after the accounting change.

In summary, the evidence from China adds richness to the broader literature by showing that domestic institutional forces dominate international standards in shaping reporting practices.
We believe that China research has the opportunity to significantly expand the literature by further utilizing the country’s distinct institutional features to address new questions. For example, convergence to international standards is a part of China’s effort to lend legitimacy to its accounting information on the international stage (Zhang, 2020). It would therefore be interesting to go beyond firm-level analyses and probe whether convergence with international standards has produced real consequences for China’s interactions with the rest of the world, for instance, in trade disputes with the WTO and in China’s inbound and outbound FDI. In addition, China’s convergence to IFRS does not imply automatic adoption of all IFRS standards. It would add to our understanding of the motivation for adopting IFRS by expanding beyond accounting considerations and examining the political, economic, and cultural forces that go into China’s decisions to accept, reject, or modify IFRS standards.

2.1.1.2. The impact of institutional and market forces on audit quality

There was a low demand for audit quality when China aligned itself with international auditing standards back in 1995 (e.g., DeFond, Wong, and Li, 2000). In this section, we explain how stricter regulatory and legal institutions together with market forces have helped to strengthen auditor incentives in China since that time. Broadly speaking, there are three sources of incentives for auditors to provide competent audits: 1) regulatory oversight, 2) private litigation, and 3) reputation impairment. In the next three subsections, we discuss the extent to which these institutional and market forces motivate Chinese auditors to provide competent audits.

1) Do Chinese auditors face tough regulatory oversight?

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12 On the other hand, auditors face incentives to compromise audit quality in order to curry favor with clients and generate higher audit fees.
In China, regulatory oversight provides a key source of auditor incentives. China’s oversight regime shares some similarities (but also some differences) when compared with the current U.S. system of audit oversight. In the U.S., the Public Company Accounting Oversight Board (PCAOB) issues auditing standards, decides whether an audit firm can be registered to audit SEC issuers, conducts regular inspections of registered audit firms, and punishes sub-standard audits by issuing fines and revoking audit firms’ registrations. In China, these oversight responsibilities are shared between the Chinese Institute of Certified Public Accountants (CICPA) and the China Securities Regulatory Commission (CSRC), who work in close partnership with the MOF. The CICPA conducts inspections of public company audit firms every three years. Depending on the results of an inspection, the CICPA can impose various penalties, including suspensions of CPA licenses, public censure, and mandatory training. The CSRC is responsible for investigating alleged cases of auditing and financial reporting failures at publicly listed firms. Between 1992 and 2018, the CSRC sanctioned 94 audit firms and 222 individual auditors. The number of CSRC-sanctioned audit firms is high relative to the total number of CSRC-registered audit firms, which ranges from 40 to 106 per year.

Many commentators perceive China’s audit oversight regime as being quite tough (e.g., Chen, Firth, Gao, and Rui, 2005), although this view is not held universally. For example, Chen, Peng, Xue, Yang, and Ye (2016) argue that monetary penalties for audit failures are often minor and, although the offending audit firms may have their licenses suspended or revoked in egregious cases, their partners often escape severe punishments. Regardless of the characterization of regulatory toughness, China’s reliance on public enforcement to incentivize auditors has fundamental limitations because regulators face capacity constraints and could be susceptible to political influence. While these limitations apply to other countries as well, they are
particularly salient in China, where public enforcement is a prerequisite for private litigation, a topic to which we now turn.

2) Do Chinese auditors face a significant threat from civil litigation?

Civil lawsuits are a market-based remedy for low quality audits and financial reporting failures. However, civil lawsuits are relatively rare in China. Indeed, from 2000 to 2015, only 149 of China’s publicly listed firms were involved in accounting lawsuits (see Table 1). This number translates to a frequency of approximately 0.529% lawsuits per firm-year. In comparison, there were 1,740 accounting lawsuits for U.S. publicly listed firms during the same period, which is approximately 3.339% of publicly-listed firm-years. The relatively low incidence of accounting litigation in China is not attributable to higher quality financial reporting. In fact, the accounting misstatement rate is approximately two to three times higher in China than in the U.S. (Chen, Firth, Gao, and Rui, 2006; Lennox and Wu, forthcoming).

Why are civil lawsuits so rare in China? A key reason is that plaintiffs face significant obstacles to winning cases against auditors. Before 2005, civil lawsuits were almost always unsuccessful because auditors’ legal responsibilities were not clearly defined. The situation improved in 2005 when China’s Securities Law was amended to define auditors’ legal responsibilities. The amendment was followed by a modest increase in successful lawsuits against audit firms (Dhaliwal, Liu, Xie, and Zhang 2017). Even today, however, it remains very difficult for plaintiffs to win damages unless a criminal prosecution or regulatory sanction has already established culpability (Huang 2018). The government prioritizes public enforcement over civil litigation because it believes that criminal prosecutors and regulatory authorities are in

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13 Unfortunately, we do not have data on the number of audit firms named as defendants in the 149 accounting lawsuits in China. We also do not have data on the number of accounting lawsuits in other countries such as the UK, Europe, or Australia.
the best position to evaluate allegations of misreporting, whereas the civil courts are thought
to lack the necessary resources and expertise to evaluate cases properly. Consequently, civil lawsuits
have to ‘piggy back’ on the investigations of regulators and prosecutors in order for plaintiffs to
have a realistic prospect of winning damages. Public enforcement is therefore a necessary
condition for private enforcement of China’s securities laws, which significantly reduces the
threat of private litigation and opens the door to political influence in the private litigation process
(e.g., Firth, Rui and Wu, 2011; Ang and Jia, 2014; Lu, Pan, and Zhang, 2015).14

In contrast to our above description of China having a low threat of civil litigation, a
couple of studies suggest that Chinese auditors actually faced a significant litigation threat as far
back as the early 2000s. For instance, Firth, Mo, and Wong (2012) hypothesize that audit firms
face a greater liability threat when they are organized as unlimited liability partnerships rather
than as limited liability companies, and that the greater liability threat motivates unlimited
liability partnerships to disclose client problems. Consistent with this hypothesis, the study finds
that unlimited liability partnerships are more likely than limited liability companies to issue
modified audit opinions.15 Chen, Sun, and Wu (2010) is another study which assumes a
significant auditor liability threat during the early 2000s. The study argues that auditors faced a
greater litigation threat in 2001-2004 compared to 1995-2000 because a series of high-profile

14 There are significant institutional differences between the Chinese and U.S. legal environments (Huang 2018). One
such difference is that class action lawsuits were not permitted in China until very recently. Instead of filing a lawsuit
on behalf of all similarly situated individuals, Chinese investors brought individual or joint actions. Nevertheless,
Chinese lawsuits shared some similarities with class actions in the sense that the court’s ruling could be applied to
members of the plaintiff class even if they have not participated in the lawsuit. In the U.S., members of the class can
opt out of the case and bring a claim on their own but they must notify the class counsel within a specified time frame
and, if a class member does not opt out, he or she is bound by the outcome of the lawsuit. In contrast, China followed
an opt-in rule in which plaintiffs who have not registered with the court when the case is filed can become members of
a class by later bringing a suit. The above regime changed in July 2020, when the CSRC issued rules allowing class
action lawsuits with an “opt-out” rule:
15 Firth, Mo, and Wong (2012) assume that modified audit opinions mitigate an auditor’s liability risk. However, the
U.S. literature does not provide much support for this assumption (Lys and Watts, 1994; Kaplan and Williams, 2013;
Lennox and Li, 2020), and we are unaware of any evidence supporting this assumption in the China setting.
accounting scandals at the turn of the century prompted the Chinese government to facilitate the filing of civil lawsuits.\textsuperscript{16} The study predicts that the stronger legal environment changes the sign of the relationship between a client’s economic importance and the auditor’s issuance of an unfavorable opinion. Specifically, the study predicts a negative (positive) relationship in 1995-2000 (2001-2004) because auditors would be willing (less willing) to compromise their independence for economically important clients when the legal environment is weak (stronger). The study’s findings are consistent with these predictions.

In our view, it is doubtful that Chinese auditors actually faced a significant liability threat in the early 2000’s. Although a few accounting lawsuits were filed in that period, the auditors were rarely named as co-defendants and - even when auditors were named - the lawsuit outcomes did not generally result in auditors having to pay damages (Dhaliwal, Liu, Xie, and Zhang 2017).\textsuperscript{17} It is also worth bearing in mind that the Chinese auditing profession underwent significant restructuring at the turn of the century, including a government disaffiliation program completed in 1999 and a wave of audit industry consolidation around 2000, that were intended to improve auditor independence. Thus, the government disaffiliation program and the consolidation of the audit industry serve as alternative explanations for the improvement in audit quality around the time examined in Chen, Sun, and Wu (2010).

While, historically, Chinese auditors have faced a very low litigation threat, we are not convinced that the threat remains very low today. As shown in Table 1, the average number of accounting lawsuits was less than three per year between 1999 and 2012, but that number has

\textsuperscript{16} On January 15, 2002, China’s Supreme Court ruled that investors could file civil actions in cases which the CSRC had already investigated and sanctioned.

\textsuperscript{17} Dhaliwal, Liu, Xie, and Zhang (2017) find 9 companies with accounting-related lawsuits in the period 2001-2004 and the company’s audit firm was named as a defendant in only one of the 9 cases. Similarly, Table 1 shows a total of only 12 accounting lawsuits during the period 1999-2005.
increased to more than forty-five per year between 2013 and 2018. These statistics suggest that the risk of litigation has become more important in recent times. One explanation for the rapid rise in accounting lawsuits could be that regulatory oversight has become tougher due to increased numbers of non-SOE firms becoming publicly listed. Compared to SOEs, the non-SOE firms tend to be smaller, riskier, and receive less protection from the state, which means they may attract more public enforcement. Another explanation is that the increase in lawsuits is driven by commercial innovations within the legal sector. Huang (2018) suggests that Chinese securities lawyers have marketed their services to plaintiffs by offering ‘risk agency fees’, in which the law firm bears the costs of litigation and receives a percentage of any payout in the event that the case is successful. The fee sharing system seems to have fostered an entrepreneurial sector of securities lawyers who seek out potential cases on behalf of investors. Another potential explanation is that the government’s public anti-corruption campaign (introduced in 2012) resulted in more civil litigation. We encourage future research to examine whether the rise in accounting lawsuits is attributable to entrepreneurial innovations within the legal sector, increased oversight from the regulatory authorities, or other factors such as the government’s anti-corruption campaign. Further, it would be interesting to examine whether the merits of accounting lawsuits hinge upon whether they are driven by regulatory or market forces, and whether such forces have implications for audit quality and financial reporting quality.

3) Do Chinese auditors face a significant threat from reputation impairment?

Reputational concerns provide a market-based source of incentives for auditors. In countries with strong legal environments it can be difficult for researchers to isolate the

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18 There is some ambiguity in Chinese law over the term ‘contingency fees’ and whether contingency fees are legally permissible. Fee structures that are economically equivalent to contingency fees are more commonly known as ‘risk agency fees’ and these fee structures are permitted in China (Huang 2018).
reputational channel from the liability channel because a scandal that damages an auditor’s reputation often results in litigation as well. Given the interdependency between litigation and reputation, prior studies of auditor reputations focus on countries with low litigation risk, such as Germany and Japan (Weber, Willenborg, and Zhang 2008; Skinner and Srinivasan 2012). These studies provide compelling evidence that auditor reputations are impaired by well-publicized audit failures. There are similar findings in the weak legal environment of China as well. For instance, He, Pittman, and Rui (2016) examine whether audit partners suffer reputation damage following a high-profile scandal which became widely known as the Chinese Enron.\textsuperscript{19} Partners associated with the culpable audit firm found it more difficult to attract new clients or keep existing clients, suggesting their reputations were damaged even though the partners had no direct involvement in the failed audit. Chen, Chen, Han, and Yuan (2021) find that individual auditors are penalized with career downgrades after they are associated with client restatements, with such auditors ceasing to sign public company audit reports and moving to audit firms with only private company clients. Similarly, Knechel, Mao, Qi, and Zhang (forthcoming) find that signatory auditors are more likely to leave the profession after providing low-quality audits or

\textsuperscript{19} The Chinese Enron (Yin Guangxia) overstated its profits by US$93 million between 1998 and 2001 and four of the company’s senior managers were subsequently imprisoned for forging documents and engaging in a massive accounting fraud. The license of Yin Guangxia’s external audit firm (Zhongtianqin) was revoked and the professional certificates of its two certified public accountants were cancelled. Nevertheless, Zhongtianqin was held not liable for damages in the civil lawsuit, which illustrates how difficult it was for plaintiffs to win payouts from auditors during the early 2000’s.
generating lower fee revenues. Overall, these studies provide compelling evidence that Chinese auditors suffer significant losses from reputation impairment.

In summary, the available evidence suggests that institutional forces from public enforcement and civil litigation as well as market forces are helpful for motivating Chinese auditors to provide competent audits. Further, the litigation threat seems to have become much more significant in China in recent years. Nevertheless, civil litigation and reputational incentives are very much dependent on the effectiveness of regulatory oversight in the China setting. We see room for more research on the source of auditor incentives. For example, it is important to better understand how public enforcement affects the incentives stemming from civil litigation, given that the existence of the latter depends critically on the effectiveness of the former.

2.1.2. Regulatory oversight of stock market listings

2.1.2.1. Profitability thresholds

The CSRC exercises strict regulatory oversight of China’s stock market. It sets stringent listing and delisting requirements and manages both the total volume and the allocation of capital raising activities by controlling the approvals of share issuances. A major listing requirement in China is that a firm must achieve accounting profitability prior to applying for an initial public

20 Wu and Ye (2020) hypothesize that an increase in client visibility motivates auditors to be more conservative because a more visible client is likely to attract more scrutiny from regulators and because an audit failure is more costly to the auditor’s reputation when it involves a highly visible client. The study measures changes to client visibility using the addition or removal of a client’s controlling owner to a well-publicized list of China’s wealthiest individuals. Consistent with increased client visibility motivating auditors to be more conservative, the study finds that auditors increase audit fees and issue more unfavorable opinions after the controlling owners of audit clients are added to the list of the top 200 richest people. While these findings suggest that client visibility strengthens auditor incentives, it is unclear whether the findings are due to a reputational channel or a regulatory channel.

21 Chen, Su, and Zhao (2000) document negative market reactions to modified audit opinions (MAOs) in China, suggesting investors view these audit opinions as informative. However, interpreting the market reactions requires caution as it is difficult to isolate the information content of audit opinions from other financial information released concurrently with audit opinions (Dodd, Dopuch, Holthausen, and Leftwich, 1984; Myers, Shipman, Swanquist, and Whited, 2018).
offering (IPO). After a firm becomes listed, it needs to maintain profitability on an ongoing basis because the CSRC requires firms to be delisted if they report three consecutive years of losses. In addition, listed firms generally need to meet further, more stringent, profitability requirements in order to raise additional capital through rights issues or seasoned equity offerings (SEOs). Thus, profitability thresholds feature prominently in many CSRC regulations.

The bright-line profitability thresholds create strong incentives for firms to manage earnings. Chen and Yuan (2004) study how the CSRC responds when firms manage earnings upward to meet the 10% ROE threshold for rights issuance. The study finds that the CSRC is less likely to approve a firm’s application for the rights issue if the firm meets the earnings threshold by reporting abnormally large amounts of nonoperating income. However, the CSRC’s monitoring is only partially effective as some firms are able to slip through the net and obtain approval by overstating their nonoperating income. These ‘suspect-approval’ firms are found to have worse performance subsequent to the offering date, compared to firms whose rights offerings are approved in the absence of abnormally high nonoperating incomes. While Chen and Yuan (2004) focus on the behavior of the CSRC, Haw, Qi, Wu, and Wu (2005) explore how investors respond to earnings management. Using the same setting of rights issues, Haw et al. (2005) find weaker short-window stock price reactions to earnings suspected of being managed upwards, indicating that investors, as well as the CSRC, are aware of firms’ accounting maneuvers.

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22 China is not unique in imposing earnings thresholds for stock market listings. For example, the NYSE and Nasdaq also have earnings thresholds as a part of their listing requirements. However, the earnings thresholds for U.S. firms are not binding if a firm satisfies other requirements (e.g., size), whereas in China the profitability requirement needs to be met unconditionally. Therefore, earnings thresholds for new listings are arguably more important for Chinese firms than U.S. firms.
The rights issuance thresholds have become a popular marker of earnings management incentives in the China literature. Following Haw et al. (2005), many studies use the small bin immediately above the rights issuance thresholds to flag firms suspected of earnings management. An important assumption underlying this methodology is that firms would like to pursue a rights issue whenever possible. To the extent this assumption is not satisfied, it introduces noise and potential bias into the earnings management proxy. Another limitation of this methodology is that there can be large type I and type II errors when relying on the histogram approach to detect cases of upward earnings management (e.g., Bird, Karolyi, and Ruchti, 2019; Gerakos, 2019). These errors need further exploration in order to better understand the merits and shortcomings of this popular earnings management proxy in the China literature.

2.1.2.2. Cronyism in the regulatory process for screening stock issuances

The CSRC has a screening committee to vet the firms that apply to issue equity. Prior to 2004, most members of the screening committee were government bureaucrats and the screening process was highly politicized. A change in policy in 2004 resulted in business professionals (auditors, lawyers, investment bankers, and mutual fund managers) being appointed to the committee. The increase in representation from the business community decreased the importance of political considerations and increased the importance of commercial criteria in the screening process. However, there were questions as to whether increased representation from the business community could have unintended consequences. For example, firm applicants and their advisers might exploit their commercial connections with committee members in order to pass the screening process more easily.

Consistent with such concerns about cronyism, Yang (2013) finds that an IPO firm’s application is more likely to be approved by the screening committee when the applicant’s audit
firm is connected to a member of the committee. The connection effect is only present for non-top-tier auditors, whose reputations are likely less valuable. Among the non-top-tier auditors, connected audit firms earn significantly higher fees from IPO applicants and they enjoy larger shares of the IPO market than non-connected firms, suggesting that audit firms benefit from having connections to the screening committee. Brockman, Firth, He, Mao, and Rui (2019) extend Yang (2013) to the setting of SEOs and find that SEO applications are more likely to be approved when the applicant’s law firm or audit firm is connected to the screening committee. Both studies find that connected applicants experience worse performance following the offering date, which is consistent with connections helping low quality firms gain capital access, thereby reducing the efficiency of the capital allocation process.

2.1.2.3. The transition from a government-driven model to a more market-based system of capital allocation

China has traditionally relied on administrative governance as a substitute for market forces in guiding resource allocation in the stock market (e.g., Pistor and Xu, 2005). The government-driven approach is predicated on the idea that China’s underdeveloped stock market and unsophisticated retail investors require government protection. For example, the CSRC’s profitability thresholds reflect the government’s belief that loss-making firms pose significant risks to the integrity and reputation of the stock market. However, this government-centric approach faces intrinsic limitations. As noted by Stigler (1971), the political system is a relatively inefficient mechanism for aggregating information. Regulators are paid administrative wages and do not profit from information in the way investors do, and thus are less motivated to engage in costly information acquisition. In addition, no matter how well-funded a regulatory body might be, its information processing capacity is unlikely to rival the collective knowledge of the market (Hayek, 1945). Furthermore, regulators are self-interested agents who are
susceptible to political influence and regulatory capture (Watts and Zimmerman, 1986). Finally, regulators have different risk preferences than investors. They have strong incentives to avoid being blamed for scandals and they tend to prefer the rigidity and certainty of a bureaucratic system built on rules (Ball, 2009).

Gradually, China has been incorporating more market elements into its stock market capital allocation process. The aforementioned shift in the CSRC screening committee, from a purely political model to one relying on the input of business professionals, is one such step. In a further move towards a more market-oriented system, the Shanghai Stock Exchange launched a pilot program in 2019 to replace the current IPO approval process with a market-based registration system. Under China’s newly revised Securities Law that took effect in March 2020, the new registration system is expected to apply to all IPOs in the future. When fully implemented, the new Securities Law is expected to abolish the CSRC’s regulatory approval system for IPOs and do away with sustained profitability as a listing requirement.23 As these reforms unfold and the key decision rights transfer from one group of economic agents to another, rent-seeking opportunities and the nature of conflicts of interest are likely to change. We see opportunities for future research to examine whether the new market-based registration system improves the capital allocation process in China’s stock market, for example, by screening out low-quality firms that masquerade as high quality through earnings management. Moreover, future research could examine how switching from an administrative system of regulatory oversight to a market-based disclosure system affects firms’ incentives to manage earnings.

2.2. State ownership

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During its formative period in the early 1990s, China’s stock market was dominated by SOEs. Today, state ownership remains prevalent in listed firms although the non-state sector has gained in significance. The government generally retains controlling ownership stakes in sectors that it considers important from a strategic perspective, such as energy, transportation, banking, and the news media. In the following subsections, we survey the evidence on state ownership.\textsuperscript{24} We divide our discussion into agency conflicts (Section 2.2.1), accounting information environment (Section 2.2.2), auditor selection (Section 2.2.3), and managerial incentives (Section 2.2.4), and show how state ownership can alter these key economic outcomes.

2.2.1. Agency conflicts and state ownership

High ownership concentration is a characteristic of virtually all Chinese listed firms, including both SOEs and non-SOEs. For instance, controlling shareholders owned an average 39\% (32\%) of the shares at SOEs (non-SOEs) in 2015 (Wang, 2020).\textsuperscript{25} These large ownership stakes have created significant agency conflicts between the controlling and minority shareholders. The nature of the conflicts can manifest in different ways, depending on whether the controlling shareholder is the government (i.e., in an SOE) or private families and founders (i.e., in non-SOEs). For example, Jiang, Lee, and Yue (2010) document that asset tunneling is less severe when the controlling owner is a state entity rather than a non-state entity, and that tunneling is less severe for entities controlled by the central government than for entities controlled by a local

\textsuperscript{24} An SOE is a firm in which the government retains ultimate control rights. Since 2001, listed firms in China have been required to disclose the identity of their ‘actual controller’ (i.e., the ultimate owner) in their annual reports. The actual controller of a listed company is one that meets any one of the following criteria: 1) it has over 50\% of the share ownership, 2) it controls over 30\% of the shareholder voting rights, 3) through its voting rights it can elect over half of the firm’s board of directors, 4) through its voting rights it can significantly influence major decisions at the shareholder meetings, 5) other situations as determined by the CSRC.

\textsuperscript{25} The presence of the state can influence corporate ownership structures even in the nonstate sector. As Stulz (2005) illustrates, the risk of expropriation by the state can amplify the risk of expropriation by firm insiders (termed the twin agency problems) because insiders retain large controlling stakes as a defense against the risk of state expropriation.
government. Similar evidence is documented in Ge, Li, Liu, and McVay (forthcoming), who find that private perquisite consumption and asset tunneling are more pervasive at non-SOEs than at SOEs. While these studies do not investigate the reasons for the differences between SOEs and non-SOEs, their findings indicate that the nature and degree of agency conflicts between controlling and minority shareholders vary with the identity of the controlling shareholder.

There are several reasons why the state may be less likely than a private controlling shareholder to tunnel assets from minority shareholders. First, state entities have weaker financial motives than private entities due to their pursuit of social and political agendas. Second, state entities, especially those controlled by the central government, may have less need for expropriation because they are generally in a more secure financial position than private entities owing to government support; i.e., the state’s “helping hand” (here we use the terminology “the state’s helping/grabbing hand” narrowly from the perspective of an individual firm rather than from considerations of social benefits and costs). Third, the success of the stock market is an important objective of the central government, and state entities, especially those controlled by the central government, are less likely to engage in blatant abuses that could undermine this objective. Finally, state entities are subject to closer monitoring by the government, for example, through anti-corruption campaigns and periodic government audits. In addition to external audits by public accounting firms, SOEs are also subject to the oversight of government auditors (e.g., Chu, Fisman, Tan, and Wang, 2021). While SOE firms exhibit less asset tunneling than non-SOEs, this evidence does not necessarily mean that SOEs exhibit fewer agency conflicts with minority shareholders overall. Agency conflicts can manifest in ways other than asset tunneling,

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26 In China, there are four tiers of local government: the province, city, county, and township levels.
for example, through the state’s pursuit of social and political objectives at the expense of minority shareholders (i.e., the state’s “grabbing hand”).

In summary, state ownership fundamentally alters the nature of the agency conflict between controlling and minority shareholders. This has important implications for the monitoring of agency problems, of which accounting information is a critical component. For example, prior research suggests that insiders use earnings management to conceal their private control benefits (Leuz, Nanda, and Wysocki, 2003; Gopalan and Jayaraman, 2012). Future research can investigate whether earnings management incentives are weaker at SOEs when the state is less likely than private controlling owners to engage in the types of rent extraction, such as asset tunneling, that require concealment from minority shareholders.

2.2.2. The accounting information environment and state ownership

SOEs generally have weak profit maximization incentives because they have other policy objectives, such as supporting employment, providing cradle-to-grave care for their workers, and developing industries and regions for social and political reasons (Qian, 1996; Lin, Cai, and Li, 1998). These financial burdens mean that SOEs are not fully accountable for their own performance and often depend on state support in case of financial difficulties, resulting in soft budget constraints and incentive problems. These circumstances can reduce the demand for accounting information and contribute to SOEs having more opaque accounting information environments. For example, Gul, Kim, and Qiu (2010) find that SOEs have poorer information environments (as reflected in higher price synchronicity) than non-SOEs.27 Chen, Chen, Lobo, and Wang (2010) document less accounting conservatism at SOEs than non-SOEs. This finding is

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27 Morck, Yeung, and Yu (2000) developed the price synchronicity measure to capture the amount of firm-specific information in stock prices.
consistent with lenders having a lower demand for conservative accounting as a result of SOEs enjoying lower default risk due to implicit government guarantees. However, the lower level of accounting conservatism is also consistent with the government selecting economically strong SOEs for stock market listings.

Related party transactions also contribute to low accounting transparency at SOEs. Related party transactions are a common problem in group-based ownership structures, but they pose particular challenges for SOEs because the major customers and suppliers of listed SOEs are often other SOEs and the transactions between them may not occur at market prices.\(^{28}\) Jian and Wong (2010) study earnings management through related party transactions between listed firms and their controlling owners (more than 80% of their sample are SOEs). The authors find that listed firms manage earnings upward (“earnings propping”) through related party sales to their non-listed affiliates, and the listed firms return these favors by providing loans to the non-listed affiliates. Their study highlights the challenges of discerning between the true performance and reported performance of listed firms within China’s group-based ownership structures.

The influence of state ownership on the accounting information environment is multifaceted and nuanced. For instance, weaker profit motives can temper the incentives of SOE managers to manipulate accounting numbers. Aharony, Lee, and Wong (2000) predict that SOEs in industries that receive government protection (i.e., petrochemicals, energy, and raw materials) have weaker incentives to manage earnings upwards before their IPOs compared to SOEs in unprotected industries. SOEs in protected industries are more likely to pursue social and political objectives instead of profit maximization and they enjoy more lenient listing requirements, which

\(^{28}\) In extreme cases, a listed SOE may be so dependent on their non-listed parent that it is difficult to disentangle where the listed company ends and where their non-listed parent company begins because, in a sense, the listed SOE is not a standalone economic entity. See Ball and Wu (2004) for the example of Qingqi Motorcycle.
weaken their incentives for earnings management. Consistent with this, the authors find upward earnings management by SOEs in unprotected industries, but not in protected industries.

We conclude this section by suggesting a couple of directions for future research. A commonality among China studies is their focus on publicly listed companies. We see opportunities for future research to broaden the scope of the investigation to non-listed firms, especially in their relations and transactions with listed firms belonging to the same business group.29 For example, there is a need to better understand the non-listed parents of listed SOEs. During the IPO process, the stronger units of an SOE are generally carved out for listing, leaving behind social obligations, such as employee benefits for the non-listed parent firm. These social obligations often result in off-balance-sheet liabilities that are not recognized in the listed firms’ financial statements, thereby reducing the informational value of their financial reports.30 Moreover, the listed SOEs retain strong economic ties with their unlisted parent firms that can distort the informational value of their financial reports. We recognize the challenges in obtaining data on non-listed firms, although certain data sources are available and have been used in prior research. For example, China’s National Bureau of Statistics (NBS) is one such data source (e.g., Piotroski and Zhang, 2014; Cong, Gao, Ponticelli, and Yang, 2019).

We also encourage more research on China’s credit sector and how this sector affects the use of accounting information. China’s credit sector, especially the corporate bond market, has experienced significant development, which suggests that accounting information is likely to play

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29 Identifying group-affiliated public companies is challenging due to a lack of systematic information on their non-listed group affiliates. Owing to this difficulty, some studies have relied on the very noisy method of using ownership connections within the sample of publicly listed firms to identify group-affiliated firms (e.g., Fang, Pittman, Zhang, and Zhao, 2017).

30 Often the listed company is a subsidiary of a non-listed parent company, which would not fall under accounting consolidations of the listed company. The off-balance sheet obligations of listed subsidiaries are usually disclosed as related party transactions with the parent company.
an increasingly important role in credit allocation decisions. One important development involves investors’ changing expectations of implicit government guarantees. The government has traditionally bailed out SOEs.\textsuperscript{31} However, the government has recently allowed more firms, including some SOEs, to default on their bonds.\textsuperscript{32} Future research may look at whether there is an increased demand for accounting information at SOEs when investor expectations of implicit government guarantees lessen.

2.2.3. Auditor selection and state ownership

Before 1997, China’s domestic audit firms were affiliated with local governments and universities, or they were joint ventures with international audit firms. The affiliations with local governments raised concerns about potential threats to auditor independence because the government-affiliated auditors were also being hired to scrutinize the accounts of local government SOEs. In 1997, the MOF and CSRC tried to mitigate the threats to independence by requiring audit firms to sever their financial and organizational affiliations with local governments. Audit firms complied with the letter of the requirements but not always with their spirit, as many firms continued to maintain close personal ties with local government officials in order to attract and retain the local SOEs as audit clients. Consequently, audit firms continued to be subject to the influence of local government officials even after they officially became disaffiliated, and so concerns about potential threats to auditor independence did not go away.

\textsuperscript{31} While government rescues apply mostly to SOEs, the government has on occasion bailed out the public bondholders of non-SOEs for the purpose of maintaining social stability. For example, China’s onshore public bond market experienced its first default in 2014 by Shanghai Chaori Solar Energy Science and Technology Company, a privately owned firm. The government orchestrated a rescue through loans and guarantees by state-owned entities, which resulted in full payment of principal and past due interest to the firm’s public bondholders (Amstad and He, 2020).

\textsuperscript{32} See, for example, the Wall Street Journal article on December 13, 2019, “Bond defaults reach once-safe corners of Chinese finance.”

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Focusing mainly on the period subsequent to auditors becoming disaffiliated from local governments (1996-2002), Chan, Lin and Mo (2006) find that local SOEs continue to hire small local audit firms and are less likely than non-SOEs to receive qualified audit opinions. The study interprets these findings as evidence of impaired auditor independence due to the continuing ties between local audit firms and local SOEs. However, there are other explanations for why local SOEs hire local audit firms. Wang, Wong, and Xia (2008) propose and test three alternative explanations. The first is that local SOEs hire local audit firms in order to exert influence over them (i.e., the independence story of Chan, Lin, and Mo (2006)). The second explanation is that local SOEs have preferential access to government loans and subsidies, which makes their financial reporting less important and reduces their need for high quality auditing. A third explanation is that local audit firms are well matched with local SOEs because local auditors are more familiar with their operations due to their close proximity. Wang, Wong, and Xia (2008) find evidence consistent with all three explanations.

Chen, Chen, Lobo, and Wang (2011) offer a fourth explanation for the tendency of SOEs to hire local audit firms. The authors contend that SOE managers have less incentive to misstate their accounting performance than the managers of non-SOEs because SOE managers pursue the government’s social and political goals rather than purely commercial objectives. Consequently, SOE managers perceive a smaller signaling benefit from selecting high-quality audit firms. Consistent with this argument, the study finds that the negative relation between audit firm size and discretionary accruals and the negative relation between audit firm size and the cost of equity capital are attenuated for SOEs, as compared to non-SOEs.

In sum, there is a general consensus in the literature that SOEs tend to hire small low-quality auditors. However, researchers diverge on the reasons for this relation. Some studies
suggest that SOEs are more likely than non-SOEs to select low-quality auditors because SOEs have stronger incentives to misreport (Chan, Lin and Mo 2006; Wang, Wong, and Xia, 2008). Other authors posit that SOEs are more likely to hire low-quality auditors because SOEs have weaker incentives to misreport; i.e., the signaling benefits from appointing a high-quality auditor are smaller for SOEs (Chen, Chen, Lobo, and Wang, 2011). It would be useful for future research to disentangle which of these two arguments dominates, and under what circumstances.

2.2.4. Managerial incentives and state ownership

Executive compensation and executive turnover are two key internal governance mechanisms that can help to address the agency problems between top management and shareholders. State ownership adds another layer of complexity to the traditional principal-agent relationship because property rights at SOEs are vaguely defined. In theory, the state embodies “all the people”, who are the symbolic owners of the SOEs. In reality, however, SOEs are largely controlled by career bureaucrats who are in charge of monitoring and incentivizing top SOE executives. This arrangement likely weakens financial incentives and introduces political and social objectives into the incentive structures of SOE managers. In the following subsections, we survey the evidence on pay-performance sensitivities (Section 2.2.4.1), discuss the effects of Hong Kong listings (Section 2.2.4.2), and examine the specific incentive features of SOEs (Section 2.2.4.3).

2.2.4.1. Evidence on pay-performance sensitivities

A number of China studies follow the traditional compensation literature by investigating the sensitivities of executive cash compensation to two types of performance measure: stock returns and accounting performance (e.g., Kato and Long, 2006a; Conyon and He, 2011; Bryson,
Collectively, these studies provide two main takeaways. First, executive cash compensation is sensitive to both stock returns and accounting performance. Second, pay-performance sensitivities are generally weaker at SOEs than at non-SOEs. Studies also make an effort to benchmark their findings for China to the U.S. and other developed countries. However, differences in sample periods and research designs make clear comparisons difficult. Bryson, Forth and Zhou (2014) offer perhaps the most direct and comprehensive evidence, finding that the cash pay-to-performance elasticities (in both stock returns and ROA) are lower in China relative to the U.S. and several major European economies. Interestingly, Bryson, Forth and Zhou (2014) find a growing sensitivity of cash pay to stock returns in Chinese firms during their sample period of 2006-2010. It would be interesting to investigate whether the increased sensitivity over time is related to improvements in stock price informativeness and/or the quality of corporate governance.

The above comparison of Chinese and U.S. firms is based solely on cash compensation and likely understates the difference in CEO total compensation incentives between the two countries. Core, Guay, and Verrecchia (2003) find that, in U.S. firms, only a minor portion of CEO total compensation comes from cash pay. Compared to the U.S., equity compensation is much less prevalent in China, especially among SOEs. For instance, in 2017, only 33% of non-SOEs and 5.9% of SOEs were using equity-based compensation plans (Wang, 2020). However, this is not to say that non-cash considerations are unimportant for managerial incentives in China. For example, CEO shareholdings can be substantial in non-SOEs run by founders and their families. Another

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33 For reviews of the broader compensation literature, see Murphy (1999), Bushman and Smith (2001), and Armstrong, Guay, and Weber (2010).
34 Similar evidence is documented for executive turnover. For example, Kato and Long (2006b) find CEO departures to be sensitive to both stock returns and accounting performance, but the sensitivities are attenuated at SOEs.
35 Total compensation comprises cash pay, equity pay, and changes in the value of an executive’s total equity holdings.
36 Equity compensation has been allowed in China since 2006.
important component of executive compensation is perquisite consumption (e.g., for entertainment, travel, the use of company cars, housing subsidies, etc.). Perquisite benefits are widespread in China but such benefits are likely to be under-reported, partly because of their links to corruption or tax avoidance (Cai, Fang, and Xu, 2011). China’s anti-corruption campaign in 2012 provides a possible shock to perquisite consumption and offers an opportunity to study how non-pecuniary benefits factor into a CEO’s total compensation package. In general, the literature can benefit from a more in-depth analysis of the non-cash components of executive compensation in order to provide a more complete picture of managerial incentives in China.

2.2.4.2. How does a Hong Kong listing affect managerial incentives?

Chinese firms listed in Hong Kong are exposed to the territory’s stronger institutions and governance norms while at the same time being subject to the influence of the institutional environment on the mainland. The literature paints a complex picture of how Hong Kong listings affect managerial incentives. Focusing exclusively on state-controlled companies, Ke, Rui, and Yu (2012) compare the domestic A-share firms, H-share firms (those incorporated in mainland China and listed in Hong Kong) and Red Chips (those incorporated outside mainland China and listed in Hong Kong). Among the A-share firms, CEO cash compensation is found to be sensitive to

37 In China, perquisite expenditures on traveling, business entertainment, overseas training, board meetings, company cars, and meetings are disclosed by publicly listed firms on a voluntary basis. Evidence from prior research suggests that perquisite expenditures are associated with lower quality financial reporting, less informative stock prices (Gul, Cheng, and Leung, 2011), and higher crash risk in SOEs (Xu, Li, Yuan, and Chan, 2014).

38 Shortly after taking office in 2012, Xi Jinping’s Politburo announced a campaign to root out bribery, excessive bureaucracy, and government officials receiving private benefits. The Party’s Central Commission for Discipline Inspection (CCDI) launched a website for whistleblowers to report graft and violations of the policy. The following year saw 182,000 officials being disciplined for corruption or abuse of power (Lin, Morck, Yeung, and Zhao 2018). Ke, Liu and Tang (2018) find the anti-corruption campaign led to a significant reduction in the consumption of luxury goods and services that are often used to bribe government officials (e.g., fewer purchases of expensive alcohol and banquets and fewer stays at five-star hotels).

39 The study retains only the largest 15% of A-share firms to enhance comparability with the H-share and Red Chip firms. Therefore, caution is needed to generalize the study’s A-share findings to all domestic firms in China because by design the paper focuses on a small sample of relatively large SOEs.
accounting performance but not to stock returns. Despite being in the stronger institutional environment of Hong Kong, the H-share firms are not different from A-share firms, whereas Red Chips have significantly higher cash pay-to-performance-sensitivities than A-share firms. The authors also find that CEO turnover is insensitive to performance for all three types of firm. Thus, Hong Kong listings seem to have a limited and uneven impact on managerial incentives at state-controlled firms.

There is also evidence that state-controlled firms adopt certain Western compensation practices for purely ‘window dressing’ reasons. Chen, Guan, and Ke (2013) examine the stock options granted to directors (including top executives) of Red Chip firms. Their findings suggest that the stock options at SOE Red Chips are not genuine compensation because the directors were required to forfeit a substantial portion of their vested in-the-money options. Moreover, the stock option grants had little effect on SOE behavior, which suggests that the directors knew in advance they would not be allowed to exercise them.\textsuperscript{40} Interestingly, while the study’s emphasis is on the greater prevalence of ‘phony’ stock options at SOE Red Chips, their evidence suggests that the same practice also exists at non-state-controlled firms. While not the focus of Chen, Guan, and Ke (2013), it would be interesting to explore why non-state firms also award phony stock options. One relatively simple explanation is that some of the ‘non-state-controlled’ firms in their sample are indirectly controlled by the state (the study defines state control based on the state’s direct ownership of a firm rather than the ultimate owner). Another explanation is that the state exerts its influence beyond ownership, in which case it would be important to understand the specific channels of the influence. A further possibility is that there are larger cultural or economic forces

\textsuperscript{40} The authors suggest that the government views option grants as a way to convince foreign investors that SOE directors are properly incentivized. However, the options had to be forfeited due to political concerns that directors would receive huge windfalls from exercising the options, which could in turn prompt public outrage.
that apply to both state and non-state firms. Future research could help disentangle these alternative explanations to provide a better understanding of how managerial incentives work at non-state-firms.

2.2.4.3. Opening up the ‘black box’ of managerial incentives at SOEs

Many China studies adopt the compensation literature’s standard regression framework by estimating the sensitivities of executive compensation to stock returns and accounting performance. These studies generally find lower pay-to-performance sensitivities at SOEs relative to non-SOEs. This evidence is consistent with the multitasking theory of the government, which posits that the state balances commercial goals with social, strategic, and political objectives (Bai, Lu, and Tao, 2006). However, questions remain as to how non-commercial objectives are factored into SOE managerial incentives and how they interact with the SOE’s commercial goals. There has been some progress in better understanding the factors that drive managerial incentives at SOEs, although the evidence thus far is of a rather piecemeal nature.

Du, Tang, and Young (2012) study the managerial performance evaluations of 63 central SOEs by the State-owned Asset Supervision and Administration Commission of China (SASAC). The authors document that SOE performance targets are explicitly tied to accounting metrics, such as earnings, sales growth, inventory turnover, and accounts receivable turnover. At the same time, political and social considerations, such as an SOE’s political rank and social responsibilities and its executives’ political connections, manifest in every step of the performance evaluation process through SASAC’s subjective assessments. An interesting question worthy of further

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41 A follow-up study by Du, Erkens, Young, and Tang (2018) examines the SASAC’s discretionary adjustments to SOE performance evaluations following a change in the performance metric from ROE to EVA. The study finds that SOE managers are not penalized for reporting poor EVA performance as long as they perform well on the ROE metric, apparently due to fairness considerations by the SASAC. However, such favorable adjustments are more pronounced for firms with political connections and for firms located closer to the SASAC.
The incentives of SOE managers differ from those of non-SOEs when it comes to paying taxes to the government. Bradshaw, Liao, and Ma (2019) posit that when the government is the controlling shareholder, its conflicts of interest with minority shareholders can manifest in the firm’s payment of corporate income taxes. From the government’s ownership perspective, taxes resemble a dividend, whereas taxes are like a business expense from the perspective of a private shareholder. The study therefore predicts that SOEs have stronger incentives than non-SOEs to pay taxes to the government. Consistent with this prediction, Bradshaw, Liao, and Ma (2019) find
less tax avoidance at SOEs than at non-SOEs. The study also finds that the government rewards SOE managers with a higher probability of promotion when the SOE pays more tax. The authors suggest that the promotion incentive helps to align SOE managers’ interests with the government, while exacerbating the conflicts of interest with minority shareholders. An interesting question is whether high tax-paying SOEs receive financial benefits from the government in return. If the government balances its need for tax revenues with its desire to help SOEs prosper, then the minority shareholders of the SOEs are not necessarily disadvantaged by the SOEs’ generous tax payments. Bradshaw, Liao, and Ma (2019) find no evidence of reciprocity in government grants, although there are many other ways for the state to confer benefits on an SOE, for example, through the award of lucrative business contracts or lax regulatory scrutiny.

Chen, Tang, Wu, and Yang (forthcoming) find that SOEs increase their tax payments shortly after a new local government leader takes office, suggesting that incoming politicians demand extra tax revenues from SOEs in order to fund their economic programs. Consistent with a reciprocal relationship between the state and SOEs in regards to tax collection, these authors find that high tax-paying SOEs receive more government subsidies. This finding suggests that minority shareholders at SOEs are not necessarily disadvantaged by the SOEs’ high tax payments (i.e., the state’s “grabbing hand” may be balanced by “helping hand”).

An executive position at an SOE comes with benefits that few jobs in the private sector can match (e.g., job security and rent-seeking opportunities). Chen, Kim, Li and Liang (2018) posit that these lucrative benefits cause SOE managers to exhibit greater risk aversion at higher ranks.

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42 Chow, Ke, Yuan, and Zhang (2021) question the reliance on effective tax rates (ETRs) as the chief measure of corporate tax avoidance in China because of the significance of non-income-based corporate taxes, such as value added tax (VAT).

43 Similarly, Gu, Tang, and Wu (2020) find evidence of reciprocity between SOEs and the government regarding labor employment. The authors document that SOEs are more reluctant to cut employment when sales decline (i.e., they have stickier labor costs) than non-SOEs. Moreover, SOEs with stickier labor costs subsequently receive more government subsidies, which shield them from the performance consequences of overemployment.
of the political hierarchy because they have more to lose if they are dismissed from their post. Consistent with greater aversion to large downside risks, the study finds that stock price crash risk is lower when SOE executives have higher political ranks. One complicating factor is that executives with higher political ranks are by nature better connected politically. These strong connections can bring enhanced access to resources and lax regulatory enforcement, which could also reduce the SOE’s crash risk. The authors do not find higher political ranks to be associated with better access to loans or other financing sources, although there is evidence of political connections enhancing a firm’s access to capital (e.g., Hung, Wong, and Zhang, 2012; Feng, Johansson, and Zhang, 2015). On the other hand, the study does find that high political ranks reduce regulatory scrutiny. This raises the possibility that firms with higher ranked managers benefit from the protection afforded by their political connections and that stock price crash risk is reduced through this alternative channel.

In summary, the existing literature has produced some interesting insights on managerial incentives in Chinese SOEs. However, much of the evidence is of a piecemeal nature. Consequently, there remains a lot more to be learned from opening up the black box on managerial incentives in SOEs. We encourage researchers to think beyond the traditional framework of compensation research to exploit the distinctiveness of the China setting, for example, by examining different performance metrics (e.g., social and political measures) and different governance structures (e.g., the incentives of the bureaucrats who monitor SOE managers).

Furthermore, the current China literature on incentive design has generally taken a firm-level perspective rather than a more macro perspective. We believe that accounting researchers can apply principal-agent theories to analyze China’s bureaucratic incentive structures. Moreover,
there are opportunities for future research to utilize accounting researchers’ expertise in contracting to the study of the information asymmetries and incentive designs of the political system. For instance, it would be useful to have a better understanding of how information (e.g., financial, environmental, or political in nature) is collected and utilized within the bureaucratic system to achieve the government’s economic, social and political objectives.

2.3. Political connections

China offers a powerful setting in which to examine institutional issues related to political connections. First, the dominance of the state over economic affairs, combined with the cultural penchant for guanxi (personal connections), opens the door to widespread rent-seeking activities through political connections. Not surprisingly, the evidence suggests that political connections have had far-reaching economic consequences in China. For example, politically connected firms gain better access to capital markets despite having weaker performance than unconnected firms (Hung, Wong, Zhang, 2012). Political connections also hinder the reform of legal institutions (Berkowitz, Lin, and Ma, 2015), interfere with corporate governance reforms (Berkman, Cole, and Fu 2010), and weaken the enforcement of tax laws and other regulations (Lin, Mills, Zhang, Li, 2018; Fisman and Wang, 2015).

Researchers have studied political connections in Indonesian firms in the 1990s under Suharto’s reign for many of the same advantages that we see in China (e.g., Fisman, 2001; Leuz and Oberholzer-Gee, 2006). Needless to say, China’s economy is much larger and globally significant than the Indonesian economy and China offers a much larger and timelier sample than the Indonesian setting.

2.3.1. Do political connections benefit the shareholders of connected firms?

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While the non-China literature has found that political connections are generally beneficial to connected firms (e.g., Fisman, 2001), the China literature has produced mixed findings regarding the value of political connections. Calomiris, Fisman, and Wang (2010) use an event study methodology to investigate the market reactions to: 1) an unexpected government announcement in 2001 to sell state-owned shares in SOEs, and 2) the subsequent cancellation of the plan in 2002. The authors find that the short-window market reactions are negatively (positively) associated with government ownership for the first (second) event. They conclude that the advantages conferred by state ownership to private investors (“helping hand”) outweigh the efficiency gains from private ownership. Hung, Wong, and Zhang (2015) study the value of political connections by examining how the market reacts when firms lose their connections. Specifically, the study distinguishes between corporate scandals that reduce the value of a firm’s political connections and scandals that reduce a firm’s market credibility. Consistent with political connections being more valuable than market credibility, the study finds that political scandals are associated with more negative stock returns than market scandals. Overall, the above evidence is consistent with political connections being beneficial to investors in connected firms.

On the other hand, Fan, Wong, and Zhang (2007) study a sample of SOEs that made initial public offerings and find that SOEs with political connections (proxied by the CEO’s experience as a current or former bureaucrat) have worse long-term performance subsequent to the IPO date than non-politically connected SOEs. The authors conclude that political connections invite the state’s “grabbing hand” (e.g., through the pursuit of social objectives and politicians’ private rent-seeking) and that connections are therefore detrimental to firm performance. Hung, Wong, and Zhang (2012) study a sample of SOEs that made IPOs on domestic or Hong Kong exchanges. Similar to Fan, Wong, and Zhang (2007), they proxy for a firm’s political connections with the
CEO/Chairman’s experience as a current or former bureaucrat. The authors find that politically connected firms have worse performance after listing in Hong Kong, but the firms’ managers are more likely to receive political media attention and political promotions. The paper concludes that politically connected managers pursue Hong Kong listings for political gains.

To draw clear inferences on how political connections affect firm performance, it is important to consider how the connections arise in the first place. If a non-SOE chooses to establish political connections for the purpose of rent-seeking, it is difficult to imagine an equilibrium outcome in which connections would be detrimental to the firm’s performance. The situation is more complicated for SOEs. It can be argued that all SOEs are politically connected, at least to some extent, by virtue of their state ownership. However, when prior research measures SOE political connections using the political ties of individual executives and directors, it is possible that the connections partially reflect the deliberate choices of the government and its desire to exercise greater control over the SOE.\(^{46}\) Indeed, the government considers an array of financial, political, and strategic factors when deciding both the extent of state ownership in a partially privatized SOE and the political connections of the SOE’s executives and directors. Therefore, caution is needed when ascribing observed economic outcomes to corporate insiders’ desire for political rent-seeking because connections can also reflect the government’s preference for control. When viewing political connections through the lens of the government’s objective function, it is perhaps unsurprising that the literature has uncovered evidence of both the benefits

\(^{46}\) There are various measures of firms’ political connections in the China literature. Some studies focus on whether the firm’s CEO is a current or former officer of the central or local governments or the military (e.g., Fan, Wong, and Zhang, 2007). Other studies consider whether any of the firm’s directors are current or former members of the People’s Congress or the People’s Political Consultative Conference (e.g., Lin, Mills, Zhang, and Li, 2017). Members of the People’s Congress are considered to be part-time unpaid legislators, while the People’s Political Consultative Conference is a political advisory group consisting of representatives from the Chinese Communist Party.
of state support (“helping hand”) and the costs associated with government interference (“grabbing hand”).

2.3.2. Do political connections affect capital allocation efficiency and financial reporting quality?

Piotroski and Zhang (2014) examine the impact of major political promotions on the timing of IPOs and capital allocation efficiency. The study predicts that local government officials accelerate IPOs among SOEs in their jurisdictions in the period before political promotions in order to window dress their achievements on economic development. Moreover, non-SOEs have incentives to speed up their IPOs in anticipation of disruptions to their political connections and to take advantage of the protection afforded by incumbent politicians. Consistent with these predictions, the authors find more IPOs for both SOEs and non-SOEs before impending political promotions. In addition, the promotion period IPOs are generally worse performers than non-promotion period IPOs. The paper’s results suggest that political influence undermines capital allocation efficiency in the stock market.

Prior research in non-China settings (e.g., Chaney, Faccio, and Parsley, 2011) concludes that political connections reduce financial reporting quality because politically connected firms have less need to access the capital market. Moreover, politically connected firms may issue more opaque financial reports in order to camouflage potentially corrupt activities. China research contributes to this literature by studying shocks to political connections, thereby alleviating the concern that political connections arise endogenously.47 For instance, in 2012-2013, the central government launched a series of anti-corruption reforms, one of which (Rule 18) prohibited party

47 We discuss regulatory shocks both in Section 2 and later in Section 4, but with different emphasis. The discussions in Section 4 are more focused on methodological matters regarding how to draw proper causal inferences from regulatory shocks. The discussions in Section 2, while also touching on the research design advantages of the shocks, are made within the context of research questions that are more deeply connected to China’s institutional features.
and government officials above a certain rank from serving on the boards of publicly listed firms. By forcing politically connected directors to resign their board positions, Rule 18 weakened firms’ political connections. Hope, Yue, and Zhong (2020) take advantage of this shock to study how removing political connections affects firm performance and financial reporting quality. The study finds that firms receive fewer government subsidies and have less access to long-term bank loans after losing their political connections. The study also finds that Rule 18 prompted an improvement in financial reporting quality, with the improvement being greater for non-SOEs than SOEs. Their results suggest that political connections prior to Rule 18 were particularly important for non-SOEs.

The Hope, Yue, and Zhong (2020) study captures financial reporting quality using measures of accrual earnings management and real earnings management but, given the noise in these measures, an examination of more direct measures of accounting quality, such as restatements, could shed further light on the issue. Care is especially needed when relying on unsigned accrual regression residuals to test the differences in financial reporting quality between politically connected and unconnected firms (e.g., Chaney, Faccio, and Parsley, 2011; Hope, Yue, and Zhong, 2020) because political connections come with risks that can introduce volatilities into firms’ business operations (Leuz and Oberholzer-Gee, 2006). Therefore, the large absolute abnormal accruals found at politically connected firms, which are taken in the literature as a sign of low financial reporting quality, may reflect a poor fit of the accrual regression models if connected firms are more likely to experience shocks to their business operations due to heightened political risk (e.g., Owens, Wu, and Zimmerman, 2017).

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48 As noted by Leuz and Oberholzer-Gee (2006), politicians are not perfect substitutes. Political connections, which are often built on personal relationships, can be disrupted when political powers change hands.
We conclude this section by suggesting some future research directions that touch on other aspects of China’s informal institutions. Prior literature has generally focused on political connections and personal networks to capture the effect of informal contracting, but other institutional factors can also be important. For example, China introduced the *hukou* system in 1958 to regulate labor mobility.\(^\text{49}\) Recognizing the drawbacks of restrictions to labor mobility, the government has explored ways to relax its controls in recent years.\(^\text{50}\) The easing of the *hukou* system may create shocks to local population stability and relationship-based contracting, which can in turn increase the use of arms-length contracting and the need for high-quality accounting information.\(^\text{51}\)

2.4. Government control of information

The Chinese government’s control of the economy extends to the realm of information. In the following subsections, we discuss how political influence manifests in the news media (Section 2.4.1) and in the management of GDP statistics (Section 2.4.2).

2.4.1. Media

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\(^{49}\) A person’s *hukou* location (a city or a village) is initially determined by their place of birth. It may be changed later with their employment but the process is cumbersome and comes with restrictions. The most stringent divide is between rural and urban *hukou*. For example, economic opportunities in urban areas have attracted hundreds of millions of rural migrant workers into the cities, but migrant workers have rural *hukou* in their home villages, which prevent them from receiving public healthcare benefits, enrolling their children in schools, and purchasing properties in the cities where they work. On the other hand, *hukou* generally poses less of a constraint for the mobility of well-educated individuals such as analysts, auditors, and public company executives. Therefore, the impact of the *hukou* system and its relaxation is more likely to be felt in the grassroots of society (for example, in community lending and in the behavior of rank-and-file employees) than in the upper echelons of the business world.

\(^{50}\) See the January 14, 2020 *Bloomberg Businessweek* report on “China Loosens Urban Residency Restrictions to Spur Growth.”

\(^{51}\) Researchers can also explore other cultural aspects of China’s labor markets. For instance, Li, Lin, Lu, and Veenstra (2020) find evidence of gender discrimination and a beauty premium within the financial analyst profession in China. It would be interesting to investigate whether these labor market practices affect the quality of the financial analyst profession and firms’ information environments.
There is evidence from U.S. studies that the news media serves a corporate governance role (e.g., Miller, 2006). While the U.S. media are largely motivated by market forces, the Chinese media operate under heavy government influence.52 A question therefore arises as to whether the Chinese news media can serve a similar corporate governance role. On the one hand, government influence can undermine media independence and create political bias, thus reducing the media’s effectiveness in corporate governance, especially in regards to SOEs. On the other hand, the pursuit of commercial objectives can create its own biases, for example, in favorable reporting of corporate advertisers, media sensationalism, and catering to an audience’s political preferences (Core, Guay, and Larcker, 2008). Moreover, the private owners and senior managers of media outlets can sometimes cover stories in a way that reflects their own political biases.

The media sector in China comprises state-owned official outlets (state media) and privately-owned nonofficial outlets (market media). Both types of media outlet are subject to politically motivated information control, although state media exhibit more political bias than market media (e.g., Zhao, 2000; Piotroski, Wong, and Zhang, 2017; Qin, Stromberg, and Wu, 2018). You, Zhang, and Zhang (2018) posit that market media are more efficient and more politically independent than state media. Consistent with this, the authors find that the news articles in market media are more informative and serve stronger corporate governance roles than those in state media. Market media are timelier at reporting accounting frauds than state media, and negative reports in market media better predict CSRC punishments, accounting restatements,

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52 Prior literature documents that the Chinese government exercises information control while simultaneously allowing the development of nonofficial media outlets and social media to meet market demand and facilitate the surveillance of public opinion (Lorentzen, 2014; King, Pan, and Roberts, 2014 and 2017; Qin, Stromberg, and Wu, 2017; Chen and Xu, 2017).
and negative audit opinions than state media articles. The study’s evidence suggests that political influence impedes the media’s role in monitoring corporations.\footnote{Piotroski, Wong, and Zhang (2015) provide further evidence on how political forces shape firms’ information environments. They study the stock price crash risk around politically sensitive events (i.e., the National Congress of the Chinese Communist Party and promotions of provincial-level politicians). Using the negative skewness in stock returns to measure crash risk, the study concludes that there is suppression (and subsequent release) of bad news ahead of (following) these political events, suggesting that political considerations can influence a firm’s information environment and stock prices. The study identifies the news media as one possible channel for the politically motivated control of bad news, but the specific mechanisms of information control remain unclear. For example, is information suppression equally effective among state media and market media? Can greater investor sophistication (e.g., the presence of institutional investors) serve as a countervailing force to politically motivated information control? And, as an alternative story to bad news suppression, could the changes in stock price crash risk reflect changes in political risk due to disruptions to the political order during power transitions?}

Piotroski, Wong, and Zhang (2015) provide further evidence on how political forces shape firms’ information environments. They study the stock price crash risk around politically sensitive events (i.e., the National Congress of the Chinese Communist Party and promotions of provincial-level politicians). Using the negative skewness in stock returns to measure crash risk, the study concludes that there is suppression (and subsequent release) of bad news ahead of (following) these political events, suggesting that political considerations can influence a firm’s information environment and stock prices.\footnote{Piotroski, Wong, and Zhang (2015) hypothesize that firms suppress bad news in the years when meetings of the Communist Party’s National Congress are held (i.e., 1997, 2002, and 2007), while firms release the bad news in the following year (i.e., 1998, 2003, and 2008). Their research design includes year fixed effects which are perfectly collinear with their variables of interest (Political = 1 in 1997, 2002, 2007 and Post-Political = 1 in 1998, 2003, 2008). Consequently, their results may not provide reliable inferences as to the effects of the National Congress meetings on bad news suppression and release.}

2.4.2. GDP growth statistics

China’s bureaucratic incentive system ties the career advancements of local government officials to their delivery of strong economic performance, especially GDP growth (Li and Zhou,
2005; Chen, Li and Zhou, 2005). Local government officials therefore have promotion-related incentives to manipulate the GDP statistics. Lyu, Wang, Zhang, and Zhang (2018) apply the discontinuity methodology in the earnings management literature (e.g., Burgstahler and Dichev, 1997) to the macroeconomic setting of GDP management. They find sharp discontinuities around zero in the distribution of local GDP growth forecast errors, consistent with local governments managing GDP numbers upward to meet or beat the targets. The authors distinguish between ‘real-activity-based’ and ‘paper-based’ GDP management and find stronger evidence for the latter although, as the authors note, measurement errors due to omitted real activities in their GDP growth model could favor the importance of paper management. The paper further finds that beating GDP targets is associated with a higher likelihood of promotion for local officials. What remains unclear is whether the discontinuities in the GDP distributions are entirely attributable to manipulation. It is possible that local governments meet GDP growth targets through legitimate methods rather than manipulation. For example, a growth target may motivate the local government to attract more foreign investment, reduce inefficiency, or reduce the size of the (unreported) black economy.

Chen, Cheng, Hao, and Liu (2020) connect macro-level GDP management to firm-level earnings management by studying how the incentives of provincial governments to manage GDP growth affect the earnings management activities of local firms. The study identifies three ways in which firm-level earnings management can have implications for the GDP statistics: revenue inflation, over-production, and delays of asset impairment losses. The study finds heightened

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55 The authors measure real activities using electricity consumption, freight volume, and bank loans. As an example of real activity manipulation, a recent Bloomberg Businessweek article (“How quickly will China bounce back?” on March 16, 2020) reports that some Chinese cities gave energy consumption quotas to local businesses in order to demonstrate fast economic recovery as the COVID-19 outbreak subsided within the country, and local factories complied by keeping all the lights on and idle equipment running.
earnings management through all three channels when the provincial government is under greater pressure to deliver GDP growth performance. The study’s inference of a connection between GDP management and firm-level earnings management is bolstered by a number of cross-sectional findings. For example, the association between firm-level earnings management and GDP management is stronger at local SOEs (compared to central SOEs and non-SOEs that are less influenced by local governments), when the provincial governor has greater career concerns, and in the years before provincial official turnover. Nevertheless, a potential confound is that firms’ own incentives to manage earnings may be correlated with local governments’ incentives to manage GDP growth. The authors capture firm-level earnings management incentives through ROE thresholds for SEOs, although this is likely to be just one of many firm-level motivations for earnings management.

An interesting question that remains unaddressed is whether the manipulation of GDP statistics creates genuine information asymmetry between the manipulating entity and the external world regarding its true economic performance. On the one hand, it is possible that China’s GDP statistics are viewed with skepticism by policy makers and businesses (e.g., Rawski, 2001), who presumably could adjust for the biases and leave their economic decisions largely unaffected by the manipulations. On the other hand, China’s vast bureaucratic structure unavoidably gives rise to substantial internal information frictions, which means that local government manipulations could potentially cause significant distortions in the central government’s economic policies. Other economic decision makers, both public and private, can also be affected by the manipulations because it is not costless to detect and unravel GDP management. Future studies can explore the economic consequences of GDP management and

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56 The implications extend beyond GDP management. For example, there is evidence of “book-cooking” in reported pollution statistics as well (Ghanem and Zhang, 2014).
the mechanisms used by policy makers and businesses to discipline and unravel the manipulations.

2.5. The relevance of China-centric studies and their generalizability to non-China settings

While Section 2 covers a variety of topics, they are all connected to China’s distinctive institutional features (e.g., political economy and the prevalence of social networks). Collectively, these studies point to the significance of institutions in shaping individual behavior and driving economic outcomes. For example, Section 2.2 shows that state ownership can fundamentally alter the nature and degree of the agency conflict between controlling and minority shareholders (in part owing to the presence of both a “helping hand” and a “grabbing hand” by the state), which can affect managerial incentives, influence accounting transparency, and change the implications of political connections. We see research opportunities to further exploit China’s institutional features. For instance, China is unique in that public enforcement against accounting misconduct is a prerequisite for civil litigation, blurring the boundaries between public and private enforcement and changing the nature of private litigation risk. China could thus be a useful testing ground for the complex interplays of public enforcement, private litigation, and financial misreporting (see recent theoretical work by Schantl and Wagenhofer, 2020). China studies have broadened the boundaries of existing accounting research and added new dimensions to our understanding of economic phenomena. We believe it takes a diverse collection of institutional settings, rather than one setting alone (e.g., the U.S.), to paint a complete picture of the mechanisms that drive an underlying economic phenomenon. Viewed from this perspective, the distinctiveness of China’s institutional setting can be seen as a strength to research on accounting topics.
Although the studies in Section 2 are primarily motivated by a desire to better understand China, we believe that China studies can offer insights on other jurisdictions as well because China’s institutional features share many similarities with other countries. For example, significant state ownership of business enterprises is by no means unique to China. Similar to China, many countries (e.g., the U.K., France, Germany, Brazil, and Russia) have undertaken large-scale privatization programs, and India is currently considering moving in this direction. Using a large sample of listed firms from over 100 countries in 2012, Aminadav and Papaioannou (2020) report that governments control 4.8% of listed firms, which account for 13.8% of the total stock market capitalization. Moreover, significant state ownership is not the preserve of less developed economies. La Porta, Lopez-de-Silanes, and Shleifer (1999) find that the government controls around 20% of the largest publicly traded companies in 27 wealthy economies. Furthermore, state ownership often concentrates in strategically important industries, just as it does in China. The OECD in its analysis of SOEs in its member and partner countries reports that “SOEs are highly concentrated in sectors either considered of ‘strategic’ importance or those on which large parts of the broader economy depend” (OECD, 2014). Along a similar vein, La Porta, Lopez-de-Silanes, and Shleifer (2002) find large and pervasive government ownership of banks around the world.

Although state ownership is not unique to China, one may still ask whether the phenomenon is relevant to the U.S., a country with one of the lowest government ownerships of businesses (e.g., Aminadav and Papaioannou, 2020). We believe the answer is yes. Consider the aftermath of the 2008 financial crisis, during which the U.S. government took ownership stakes in a number of distressed companies, including American International Group (AIG), Citigroup,

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57 The OECD report finds that “(h)alf of SOEs by value operate in the network industries (telecoms, electricity and gas, transportation and postal services). A further one-fifth is found in the financial sector.”
General Motors (GM), Fannie Mae and Freddie Mac. The academic discourse surrounding these events shares similar themes to those discussed in Section 2, revolving around issues related to the conflict of interest between the state and private shareholders, political influence in business decisions, restrictions on managerial compensation, and the government’s sale of its shares (e.g., Kahan and Rock, 2010; Shahabian, 2014).\(^58\)

Many aspects of China’s institutional environment share similarities with other countries, especially with emerging markets, transition economies, and insider economies. These common features include high ownership concentration, a low risk of civil litigation, the prevalence of social connections, and related party transactions. Thus, research that appears to be China-centric can have broad appeal by speaking to similar institutional settings in other countries even if the characteristics are different from those found in the U.S.

Finally, an understanding of China is important in its own right given its economic significance and the fact that events in China can have significant spillover effects on other countries. To illustrate, consider a phenomenon that has distinctive Chinese characteristics - the CSRC’s regulatory oversight of stock market listings. The CSRC’s stringent profitability requirements combined with a lengthy, unpredictable, and politically sensitive IPO approval process have caused many high growth Chinese firms to seek alternative financing channels, including overseas IPOs or reverse mergers (e.g., Lee, Qu, and Shen, 2019; Cong, Lee, Qu, and Shen, 2020).\(^59\) Cong, Lee, Qu, and Shen (2020) report that from 2007 to 2017, Chinese firms raised more funds through IPOs in the U.S. ($38.10 billion) and Hong Kong ($28.54 billion) combined.

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\(^58\) The impact of government ownership goes beyond the firms directly involved in the bailouts. For example, legal scholars express concerns that the presence of the state as a controlling shareholder may produce negative externalities on the corporate law regime by influencing the content and application of the laws (e.g., Kahan and Rock, 2010; Pargendler, 2012; Shahabian, 2014).

\(^59\) In a reverse merger transaction, a private firm merges with a publicly traded firm (a so-called shell) and gains control of the public company.
than through IPOs on the mainland ($50.32 billion). In other words, in today’s environment of global connectedness, the CSRC’s tight regulation of China’s domestic stock market has produced significant spillover effects in overseas markets, including the U.S. stock market.

3. China’s relationships with foreign investors

Over the past forty years, China has emerged from economic isolation to become a key player on the global stage. China’s fast economic growth has attracted substantial foreign investment, both in its own stock market and in overseas listings. Section 3.1 discusses research related to foreign ownership in China’s domestic stock market. Section 3.2 discusses research on Chinese firms that are listed in the United States.

3.1. The segmentation of domestic and foreign shares in China’s domestic stock market

One key institutional feature of the Chinese stock market is that listed firms have segmented share structures. A-shares are mostly held by domestic investors and are traded in Chinese currency (RMB). To access foreign capital, some firms also issue B- (or H-) shares to foreign investors. Foreign shares are quoted in foreign currencies (U.S. dollars or Hong Kong dollars) and are listed either on the mainland (B-shares) or in Hong Kong (H-shares). The shares held by domestic and foreign investors supposedly carry identical cash flow rights and voting

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60 We discuss Chinese IPOs and reverse mergers in the U.S. in greater detail in Section 3.2.
61 The CSRC’s stock market regulations is only one of many channels through which China’s domestic affairs can impact foreign investors, as illustrated by recent government actions involving overseas-listed Chinese companies. These include the last-minute cancellation in 2020 by Chinese regulators of Ant Group (an affiliate of Alibaba Group)’s Hong Kong IPO, Chinese regulatory sanctions imposed on Didi Global within a week of its New York IPO in 2021 for cybersecurity reasons, and the recent crackdown in 2021 by the Chinese government on the private tutoring sector, which has had a large negative impact on the market values of U.S.-listed Chinese companies in the education sector. The implications of the crackdown are broader than the education sector itself however, because of a ban on the sector’s use of the Variable-Interest-Entity (VIE) corporate structure. The VIE structure, through contractual arrangements, allows foreign investors to obtain the economic benefits of the underlying business (i.e., the VIE) without direct ownership control, and has been used to circumvent Chinese government restrictions on foreign ownership in certain industries (e.g., high tech). Many overseas-listed Chinese companies, such as Alibaba Group, use the VIE corporate structure, the broad legitimacy of which hinges on the future regulatory position of the Chinese government (see “Beijing’s threat to VIEs triggers Wall Street angst over China stocks: Investors worry crackdown on structure used by education companies could spread to other sectors” by Financial Times, July 27, 2021).
rights; however, foreign shares generally trade at large price discounts relative to domestic shares (see Table 2). The share price disparities persist because arbitrage opportunities are severely limited by the trading restrictions that exist between domestic and foreign shares.

Prior studies have investigated several non-mutually exclusive explanations for why foreign shares receive a price discount relative to domestic shares of the same Chinese firm. The explanations include the prices of domestic shares being driven upward due to limited alternative investment opportunities for domestic investors (Fernald and Rogers, 2002), or speculative trading in domestic shares (Mei, Scheinkman, and Xiong, 2009), or the prices of foreign shares being lower due to illiquidity (Chen, Lee, and Rui, 2001). Information asymmetry between domestic and foreign investors is another possible driver of the foreign share discount. In this section, we review the literature on the information asymmetries between domestic and foreign investors and their role in explaining the pricing disparities.

The information asymmetry explanation is premised on the idea that domestic investors possess a local information advantage over foreign investors, which depresses the prices of foreign shares relative to local shares. Information asymmetry is traditionally gauged through market microstructure-based measures such as the bid-ask spread. However, a challenge with the market microstructure measures is that they are designed to capture the information asymmetry between informed and uninformed investors within the same market, whereas

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62 China is not the only country with segmented domestic and foreign investor equity markets, although it appears to be the only one where foreign shares trade at a discount instead of a premium (Bailey, Chung, and Kang, 1999). One explanation for the foreign share premium observed in other countries is that foreign investors generally require a lower rate of return than domestic investors because of their greater ability to diversify risk. On the other hand, Fernald and Rogers (2002) suggest that China’s domestic investors require lower rates of return due to limited alternative investment opportunities. China’s stringent currency controls curb domestic investors’ ability to invest in foreign assets. For domestic investors, the main alternative investment option is bank deposits, which tend to pay below international market interest rates.

63 There have been gradual relaxations in the trading restrictions over the past two decades; however, substantial regulatory barriers and frictions remain and thus the price disparities have persisted.
China’s domestic and foreign shares are traded in separate markets. To overcome this difficulty, Chan, Menkveld, and Yang (2008) develop a model which assumes that informed traders are mostly present in the domestic A-share market, whereas the foreign B-share market is largely populated by uninformed investors. Based on this model, the authors construct information asymmetry measures of price impact, the adverse selection component of the bid-ask spread, and the probability of informed trading (PIN) for A-shares and B-shares separately. They then use the AB-share differences of these measures as proxies for the information asymmetry between domestic and foreign investors. They find that these information asymmetry measures explain substantial amounts of the cross-sectional variations in B-share price discounts.

The specific sources of the information asymmetry have been examined in subsequent research. Tang (2011) identifies accounting disclosures as a source of information asymmetry between domestic and foreign investors. Although A- and B-shares are both traded on the mainland, the disclosures to domestic and foreign investors were largely segregated during her sample period of 2000-2001. Specifically, domestic A-share (foreign B-share) investors received financial statements based on Chinese (International) Accounting Standards through one designated newspaper circulated exclusively in mainland China (Hong Kong). Based on these disclosure differences, Tang (2011) constructs a measure of foreign investors’ disclosure disadvantage relative to domestic investors. She finds that the disclosure disparity contributes to the price differences between A- and B-shares.64

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64 While Tang (2011)’s disclosure difference measure focuses on foreign investors’ information disadvantage, it does not exclude the possibility that foreign investors may possess certain information advantages; for example, firms may disclose more information to foreign investors due to their greater demand for information compared to domestic investors.
The information landscape has changed drastically over the two decades since Tang (2011)’s sample period, when there existed substantial technological barriers to global communications. Many of these technological barriers have since diminished or disappeared but the price disparities remain. In addition, since 2007, AB-share firms are no longer required to prepare two separate sets of financial statements for domestic and foreign investors, although firms can still discriminate between domestic and foreign investors in their disclosure practices. It would be worthwhile examining whether disclosure disparities remain a significant source of information asymmetry between domestic and foreign investors in today’s information environment.

Jia, Wang, and Xiong (2017) identify analyst research as another potential source of information differences between domestic and foreign investors. The study argues that domestic (foreign) analysts are better able to cater to the informational needs of domestic (foreign) investors due to the social connections and greater trust that stem from investors and analysts sharing the same location. The study finds that domestic A-share investors react more strongly to the stock recommendations of domestic analysts, whereas foreign H-share investors react more strongly to the recommendations of foreign analysts. The authors also find less stock price co-movement between A-shares and H-shares for firms with greater analyst research, suggesting that analysts can exacerbate the information differences between domestic and foreign investors.

To this day, Chinese firms continue to have segmented share structures. However, the government has cautiously moved towards allowing certain foreign (domestic) investors to trade

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65 For example, Tang (2011) discusses the lack of electronic versions of the government designated newspapers for financial disclosures and the reliance on expensive international phone calls for cross-border communications.
in domestic (foreign) shares. Most notably, in 2014, the government launched the Shanghai-Hong-Kong Stock Connect program, which allows eligible domestic investors to trade H-shares in Hong Kong and allows foreign investors to purchase A-shares for a subset of eligible Shanghai-listed firms. The Stock Connect program led to augmented fund flows between Shanghai and Hong Kong and a stronger co-movement of stock prices between the Shanghai and Hong Kong markets (Chan and Kwok, 2016; Burdekin and Siklos, 2018; Wang and Chong, 2018). Chinese firms responded to the program by significantly increasing their private meetings with foreign investors, which has improved the speed of price discovery and stock liquidity in the A-share market (Yoon forthcoming). Notwithstanding these moves toward market liberalization, there remain sizable price disparities between foreign- and domestic-owned shares (Table 2), suggesting that the liberalization process still has a long way to go.

As China’s domestic stock market continues to receive greater weight in global investment portfolios, there is a need to better understand the information environment facing foreign investors in China and the impact of foreign investors on China’s stock market. We see opportunities for more research on the information asymmetries between domestic and foreign investors. For example, the recent travel restrictions imposed by China and other countries after the outbreak of the COVID-19 pandemic are plausibly exogenous shocks to foreign investors’

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66 In 2001, domestic retail investors were allowed to purchase B-shares if they were already holding foreign currency. In 2003, select foreign institutions were permitted to purchase domestic A-shares through the Qualified Foreign Institutional Investor (QFII) system. In 2007, China introduced the Qualified Domestic Institutional Investors (QDII) program, which allows select domestic institutions to purchase foreign securities. In 2011, China introduced the RMB QFII program, further opening A-share market to foreign institutions.

67 In 2016, a similar program was announced to connect the Shenzhen Stock Exchange with the Hong Kong Stock Exchange.

68 Foreign investor ownership of China’s A-share firms is only around 3% (Carpenter, Lu, and Whitelaw, 2021).

69 The MSCI added China A-shares to the MSCI Emerging Markets Index in 2018. The A-shares are underweighted (currently at 20% inclusion ratio) and account for 5.1% of the Index in 2020 (https://www.msci.com/www/blog-posts/china-a-shares-what-have-we/02164045217). Further market liberalization is expected to lead to upward adjustments in the inclusion ratio and greater weights assigned to China A-shares. Non-A-share Chinese securities (including B-shares, H-shares, companies listed in Hong Kong and incorporated outside of mainland China, and a small number of foreign listed firms) already make up 37.4% of the MSCI EM Index in 2020.
ability to access information about Chinese firms, which could have exacerbated foreign investors’ information disadvantage and increased the price disparities between domestic and foreign shares.

3.2. U.S. listings of Chinese companies

Over recent decades, hundreds of Chinese firms have become publicly listed in the U.S. through either IPOs or reverse mergers.\textsuperscript{70} Reverse mergers were initially the dominant form of U.S. listings by Chinese firms until the early 2010’s when a large number of Chinese reverse merger companies (CRMs) were accused of engaging in fraud.\textsuperscript{71} The accounting scandals prompted heightened scrutiny of CRMs and greater regulatory oversight of reverse merger transactions (e.g., Lee, Li, and Zhang, 2015). The scandals and the subsequent regulatory scrutiny precipitated a steep decline in the popularity of reverse merger transactions in the most recent decade.\textsuperscript{72} The number of Chinese IPOs in the U.S. (CIPOs) declined in the early 2010’s but has since recovered. The significance of CIPOs for the U.S. capital market should not be understated. For example, Alibaba’s 2014 debut on the New York Stock Exchange raised $22 billion, making it the largest IPO in U.S. history. Despite recent U.S.-China tensions, there were 30 CIPOs in 2020, accounting for 15\% (59\%) of all (cross-border) IPOs in the U.S. (Ritter, 2021).\textsuperscript{73} As of May 2021, there were 248 Chinese companies listed on major U.S. stock exchanges, with a combined market

\textsuperscript{70} Reverse mergers in the U.S. provide private firms with a backdoor channel to go public without an IPO, thereby avoiding the need for an underwriter, IPO prospectus, or SEC registration statement.

\textsuperscript{71} Darrough, Huang, and Zhao (2020) report that 381 (118) Chinese companies became publicly listed in the U.S. through reverse mergers (IPOs) in 2000-2011. These CRMs accounted for roughly one quarter of all reverse mergers and about 85\% of all foreign reverse mergers in the U.S. during this period (Lee, Li and Zhang, 2015).

\textsuperscript{72} The number of reverse merger (Chinese reverse merger) transactions in the U.S. declined to 46 (7) in 2018 (Rodel, Pellicani, and Salomon, 2019) from 250 (76) in 2010 (Darrough, Huang, and Zhao, 2020).

\textsuperscript{73} See, for example, “Chinese companies are leading the global IPO rush amid a ‘flight from uncertainty’” by CNBC, October 27, 2020.
capitalization of $2.1 trillion. However, allegations of fraud continue to afflict U.S.-listed Chinese firms.

The wave of accounting scandals in the early 2010’s prompted considerable research into the quality of U.S.-listed Chinese firms, especially the CRMs. We review this research in this section. While the central focus of most studies is on CRMs, we also give attention to CIPOs in light of their significance in more recent times. Specifically, we organize our discussion around the following questions: 1) Do CRMs represent inferior investments compared to U.S. reverse mergers? (Section 3.2.1). 2) What factors motivate Chinese companies to access the U.S. capital market and are their motivations consistent with the notion that there are bonding benefits from listing in the U.S.? (Section 3.2.2).

3.2.1. Are CRMs inferior investments compared to their U.S. counterparts?

Despite widespread fraud allegations at CRMs, the findings in the literature defy a simplistic, black and white, characterization of the overall investment quality of CRMs. In particular, the evidence suggests that CRMs have weaker financial reporting quality but stronger economic fundamentals when compared to their U.S. counterparts. We discuss each of these two aspects below.

1) Financial reporting quality

Prior literature suggests that the financial reporting quality of foreign listed firms reflects the influence of their home country institutions (e.g., Lang, Raedy, and Wilson, 2006). Thus, the accounting quality of CRMs is likely to be lower than U.S. firms owing to China’s weak domestic

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75 For instance, in May 2020, shares in Luckin Coffee (the Chinese equivalent of Starbucks) plummeted 80% following a whistleblower report alleging that the firm had overstated its revenues in a massive fraud that began prior to its IPO in the previous year.
institutions. Another reason the accounting quality of CRMs is likely to be low is that reverse mergers are generally more opaque than IPOs. Given these alternative explanations, it is important to understand whether the low financial reporting quality of CRMs reflects a country (i.e., China) effect, a reverse merger effect, or a combination of both effects.

The statistics on fraud allegations paint an unfavorable picture of CRMs. For example, Darrough, Huang, and Zhao (2020) find about 17% of CRMs faced fraud allegations (reflected in SEC enforcement actions, class action lawsuits, or media reports), in contrast to around 7% of non-China reverse mergers during their sample period (2000-2011). The lower reporting quality of CRMs compared to other reverse mergers is corroborated by Chen, Cheng, Lin, Lin, and Xiao (2016) using alternative measures of financial reporting quality, including accounting restatements and several accrual-based measures. These authors compare the financial reporting quality of CRMs with three benchmark groups: 1) Chinese ADRs, 2) U.S. reverse merger firms, and 3) U.S. IPO firms. They find that financial reporting quality is significantly worse at CRMs compared to all three benchmark groups, suggesting that reporting quality is lower as a result of both country and reverse merger effects.

2) Firm fundamentals and stock returns

Lee, Li, and Zhang (2015) argue that CRMs are a class of legitimate investments despite having weaker reporting quality. The authors suggest that China’s fast economic growth combined with the CSRC’s stringent listing requirements have resulted in some promising high-growth Chinese firms choosing to list in the U.S. because they were ineligible to list in China. The

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76 It goes without saying that fraud allegations are not equivalent to proof of guilt, and that the frequency of fraud allegations reflects both the likelihood of fraud commission and the level of public and private scrutiny.

77 Chinese ADRs as defined in Chen, Cheng, Lin, Lin and Xiao (2016) are generally CIPOs, because most Chinese ADRs in their sample access the U.S. market to raise capital through an IPO.
authors compare the CRMs with three benchmark groups: 1) U.S. reverse mergers, 2) a matched sample of U.S. publicly traded firms, and 3) U.S. reverse merger firms matched with CRMs on exchange, industry, the first 10-K filing date, and size. Using a wide range of financial health and performance metrics (such as operating performance, financial risk, audit opinions, post-listing stock returns, and survival rates), the study finds that CRMs perform better than U.S. reverse mergers, even though the CRMs were more often accused of fraud. Similarly, Chen, Cheng, Lin, Lin, and Xiao (2016) document that CRMs have stronger economic fundamentals than U.S. reverse merger firms. Overall, these findings point to CRMs being a legitimate investment option that perform no worse, and perhaps even better, than U.S. reverse mergers in the long run.

Darrough, Huang, and Zhao (2020) investigate the short-term stock price reactions to CRM fraud revelations and their spillover effects. They find the fraud allegations had negative spillover effects on the stock prices of other (non-fraudulent) Chinese firms, but not on the stock prices of reverse merger firms from other countries. This evidence suggests that investors saw the frauds as stemming from the country of origin (i.e., China) rather than the method of listing (i.e., reverse mergers). The negative spillovers to non-fraudulent Chinese firms are present only during periods of low investor sentiment about Chinese stocks. The authors view this finding as evidence of non-fraudulent Chinese firms being stigmatized due to their country of origin. On the surface, the country-based pricing spillover appears to suggest the possible mispricing of non-fraudulent Chinese stocks. However, further research is needed to better understand the sources of the spillover and the extent to which it may reflect mispricing. One explanation for the spillover is that investors, justifiably or not, suspect that there are undiscovered frauds at the supposedly

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78 The authors recognize that the accounting performance measures can be distorted by fraudulent reporting. They alleviate this concern by including a wide range of non-accounting metrics and examining the long-run stock return performance of firms.
'non-fraudulent’ Chinese firms. Another possibility is that investors expect greater regulatory costs and popular backlash against all U.S.-listed Chinese firms due to the scandals. Future research might disentangle these explanations by examining the subsequent stock returns and financial performance of Chinese firms not accused of fraud but whose valuations were negatively impacted by the scandals.

3.2.2. Why do Chinese firms seek listings in the U.S. market?

Coffee (2002) posits that firms from countries with weak institutions can benefit by bonding with the strong disclosure and governance regimes of the U.S. capital market through a U.S. listing, and that the bonding benefits are greater for firms with superior growth prospects. On the other hand, Siegel (2005) presents evidence that the public and private enforcement mechanisms in the U.S. may not be highly effective for foreign firms.

The literature examines whether bonding explains why Chinese firms choose to list in the U.S. This literature generally concludes that CIPOs have bonding motivations, whereas CRMs mainly reflect an adverse selection effect due to the opacity of reverse merger transactions. For example, He, Wong, and Young (2012b) compare three samples of Chinese firms: CIPOs, CRMs, and China’s domestically listed companies. They find that U.S.-listed CIPOs have the strongest governance traits, followed by China’s domestically listed firms, with U.S.-listed CRMs being the worst. The authors conclude that CIPOs reflect bonding motivations, whereas CRMs are the result of adverse selection, in that low-quality Chinese firms take advantage of the lax listing process for reverse mergers to access the U.S. capital market. Similarly, Chen, Cheng, Lin, Lin, and Xiao (2016) find that CRMs have lower CEO turnover-to-performance sensitivities and weaker corporate governance than Chinese ADRs. The authors infer that CRMs are low-quality firms that prefer this opaque listing method.
A number of factors can complicate the above inferences. First, CRMs and CIPOs have very different firm characteristics. Reverse merger firms are much smaller, less profitable, and financially constrained than IPO firms. For most CRMs, an IPO was never a viable option in the first place (Lee, Li, and Zhang, 2015). Therefore, it may not be a question of a CRM firm deliberately rejecting the option to list via an IPO and its attendant bonding benefits. Second, the drastically different firm characteristics between CRMs and CIPOs complicate the comparisons of their governance traits. What appear to be weak corporate governance practices at CRMs may not be sub-optimal for the firms especially given their small size (e.g., Brickley and Zimmerman, 2010). Third, there is evidence that CRMs have stronger ROA performance than Chinese domestic IPOs (He, Wong, and Young, 2012b), which is consistent with CRMs being stronger firms for which a U.S. listing can bring greater bonding benefits. The bottom line is that it seems premature to conclude that CRMs are the results of adverse selection and are devoid of bonding incentives.

On the other hand, there are questions about the relative significance of the bonding motive for CIPOs (and CRMs) compared to other considerations. In other words, bonding may not be the most important driver of U.S. listings by Chinese firms. Other motivations include raising capital in the world’s largest and most liquid capital market as many Chinese firms do not qualify for public listings in China, diversifying the investor base, enhancing the firm’s visibility, increasing the prestige of the firm’s controlling owners and managers, and offering a channel for insiders to more easily move money across China’s borders and thus circumventing the country’s tight capital controls. Future research can help disentangle these alternative, and non-mutually exclusive, motives for securing a U.S. listing.

Another important question is how bonding works within the context of China’s institutional arrangements. For example, a large number of U.S. listed Chinese companies (e.g.,
Alibaba Group) adopt the VIE structure to circumvent the Chinese government’s restrictions on foreign ownership in certain industries (e.g., high tech). Consequently, foreign investors can only hold shares in the shell companies incorporated outside China (e.g., the Cayman Islands) instead of the underlying businesses (the VIEs). More research is needed to understand how the conventional bonding mechanisms function within the context of VIEs and whether investors are fully cognizant of the potentially heightened risks associated with VIEs. The recent crackdown by the Chinese government on the use of VIEs by private tutoring companies underscores these risks (see footnote 61).79

The studies in Section 3 mainly focus on China’s economic relations with foreign investors, but we feel it is important to consider how China’s broader relations with the outside world are also affected by political forces. For instance, the U.S. Congress has been working on legislation to compel U.S.-listed Chinese firms to accept PCAOB inspections of their financial statement audits or else face delisting from the U.S. stock market.80 This development could have profound future ramifications for Chinese firms’ ability to access the U.S. capital markets and for U.S. investors’ ability to invest in Chinese businesses. Furthermore, the PCAOB’s inability to inspect the work of Chinese auditors could ultimately result in the Chinese auditors being barred from auditing U.S.-listed firms. A bar on Chinese audit firms could, in turn, impact U.S. multinationals because, currently, the mainland component of a multinational audit is usually outsourced to a Chinese auditor. If a U.S. auditor is unable to outsource the work to a Chinese auditor and unable to audit the mainland component itself, the U.S. auditor may be precluded from issuing an

79 The SEC is introducing new disclosure requirements for U.S. listed Chinese companies regarding the political and regulatory risks they face. See Bloomberg report on August 24, 2021, “SEC to Demand All China Firms Say More About Investor Risks.”
80 See the Wall Street Journal report on May 26, 2020, “U.S. Moves to Audit Chinese Firms. Market Frets Over What Comes Next.”
unqualified opinion on the consolidated financial statements of the multinational. The threat of a qualified audit opinion (or opinion disclaimer) would likely reduce the incentives of multinational firms to continue operating on the mainland. These political developments are likely to affect the corporate governance and accounting information environments of Chinese firms, the portfolio choices of U.S. investors, and the investment opportunities of U.S. multinationals. We encourage future research to examine how international politics intertwines with the economic relations between China and the outside world, and the implications of international politics for the supply and demand of accounting information.

4. Novel data and regulatory shocks

The studies in Sections 2 and 3 emphasize the tensions between government intervention and market forces and China’s relationships with foreign investors. Such studies naturally have a heavy China focus but they account for only about half of all the China-related accounting papers in our survey. Many scholars choose to locate their research in China - not just because the country is interesting in its own right - but because China’s institutional setting offers access to novel data and regulatory shocks that are unavailable elsewhere. For example, China’s disclosure rules allow researchers to obtain publicly observable data on variables that are not (or have not been) observable in other countries. In addition, China’s enforcement agencies have provided a lot of proprietary data to accounting researchers. Further, the Chinese government has passed numerous reforms, allowing researchers to test new research questions and provide stronger causal inferences.

In Section 4, we highlight how studies have used the novel data and regulatory shocks to study research questions that prior studies have found difficult (or impossible) to examine, and

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81 Both the Trump and Biden administrations have also introduced investment bans by U.S. investors in a number of U.S.-listed Chinese companies due to alleged national security concerns.
to sharpen their causal inferences.\textsuperscript{82} Although the research questions in Section 4 have a less China-centric focus than those in Sections 2 and 3, we emphasize that it is still important for researchers to understand the institutional features of the China setting.\textsuperscript{83} For example, the literatures on social connections between signatory auditors and their clients (Section 4.1) and firm private communications with analysts and investors (Section 4.3) need to be viewed in the larger context of guanxi, a key informal institution in China. This understanding is important in order for a researcher to interpret the findings appropriately. Moreover, a deep understanding of the setting is required in order to evaluate whether the findings of a China study are likely to generalize to other settings.

We note at the outset that novel data and regulatory shocks are not the only tools that researchers can use to strengthen their causal inferences. Researchers can employ other methodological approaches such as instrumental variable (IV) estimation and difference-in-differences (DID) designs. IV estimation and DID designs pose their own challenges that apply as much to China research as to the wider accounting literature. For example, studies using IV estimation need to justify why their selected instrumental variables are exogenous, powerful, and satisfy the only-through condition \citep{larcker2010, lennox2012}, yet many studies that use IV estimation – including many of the Chinese studies in our survey – fail to provide these justifications. When using a DID design, researchers should test whether the treatment and control groups exhibit parallel trends in the period prior to the onset of treatment, yet many studies - including most of the Chinese studies in our survey - fail to report a test of the parallel trends assumption. Such limitations have already been discussed elsewhere and are by

\textsuperscript{82} Regulatory shocks and better data are central to providing more credible causal inferences \citep{imbens2015}. \textsuperscript{83} We find that 45\% of the citations to studies in Section 4 are from non-China research. In contrast, 26\% of the citations to studies in Sections 2 and 3 are from non-China research. This difference is consistent with the studies in Section 4 being less China-centric than the studies in Sections 2 and 3. A citation is classified as China research if it has “China” or “Chinese” in its title or abstract.
no means unique to the China literature (e.g., Larcker and Rusticus, 2010; Lennox, Francis, and Wang, 2012; Roberts and Whited, 2013; Atanasov and Black, 2016; Gow, Larcker, and Reiss, 2016; Barrios forthcoming). Therefore, we do not focus on these methodological issues. Instead, we focus on the novel data and regulatory shocks that are more distinctive to the China setting.

We organize the studies into five topic areas: auditing (Section 4.1), corporate governance (Section 4.2), financial analysts (Section 4.3), tax (Section 4.4), and the environment (Section 4.5). In each section, we describe the institutional setting, we explain how researchers have used novel data and regulatory shocks to examine new questions and to obtain sharper causal inferences, and we highlight the challenges and pitfalls that studies have encountered. At the same time, we identify new opportunities for future research. Section 4.6 concludes with some final remarks about the quality of causal inferences and the generalizability of the findings.

4.1. Novel data and regulatory shocks: Auditing

Audit research accounts for more than one third of the accounting studies in our survey. Some auditing studies focus on issues relating to government intervention and market incentives (Section 2), but the majority locate their research in China in order to take advantage of data that are (or were) very difficult to obtain in the U.S. setting. These data include information on the identities of signatory auditors, year-end audit adjustments, and the equity ownership stakes of individual auditors. Some researchers have combined these data with a major shock to the audit market, namely a package of reforms aimed at increasing the size of public company audit firms. In the following sections, we survey the studies that have utilized China’s novel data and regulatory shocks and we pinpoint the relevant pitfalls and limitations. We conclude Section 4.1 by offering some suggestions for future auditing research.

4.1.1. Background
Prior to 1978, there was no need for external financial reporting or independent auditing in China because the government was the sole owner of essentially all enterprises. It was only in the 1980s, when China opened up to foreign investment, that a need for independent auditing arose. China’s auditing profession has grown tremendously since that time.

China’s auditing profession is highly regulated and is subject to direct government intervention. In the late 1990s, the government decided for several reasons that China’s domestic audit firms needed to become bigger. First, the government wanted audit firms to be larger in order to serve the very large SOEs that the government was seeking to privatize at that time. Moreover, the government wanted China’s domestic audit firms to become larger in order to compete globally with the international Big 4 firms following China’s accession to the World Trade Organization (WTO). To achieve the increases in audit firm size, the government introduced a series of reforms that required audit firms to meet minimum size thresholds. The reforms triggered a wave of mergers as audit firms scrambled to meet the size requirements. Consequently, the number of public company audit firms dropped sharply from 106 in 1999 to 40 in 2013 (see Table 3).

In addition to direct regulation, China’s system of audit oversight relies on a mix of public and private disclosure requirements. Audit firms are required to publicly disclose the names of the most senior auditor and the second most senior auditor on each public company audit engagement. The CICPA provides further biographical information on each signatory auditor, including their age, education, the date the auditor originally entered the profession, and a record

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84 In 2000, it was announced that every public company audit firm would have to employ at least 20 qualified CPAs (previously the number had been eight). The MOF then announced that bank auditors would have to employ at least 60 CPAs and have revenues of at least RMB 15 million. From 2009 onwards, the auditors of Hong Kong-listed SOEs were required to have revenues in excess of RMB 300 million, more than 30 publicly listed clients, and more than 400 CPA employees.
of past penalties and sanctions. Further, the CICPA requires each audit firm to report the total number of hours worked on each public company audit engagement. Audit firms are required to disclose other information to the regulatory authorities but not to the public. Since 2006, audit firms have had to report to the MOF the pre-audit values of pre-tax earnings and total assets. The pre-audit data are not publicly available, but the MOF has provided the data to several teams of researchers on a confidential basis (Lennox, Wu, and Zhang, 2014; He, Kothari, Xiao, and Zuo, 2018; Zhang, Zhang, and Zhou, 2020; Chen, Krishnan, Li, and Zhang, 2020). Starting in 2013, audit firms have had to report to the CSRC the names of engagement quality (EQ) reviewers for each public company audit. Audit firms must also report to the MOF the ownership stakes of every equity partner. The data on EQ reviewers and equity ownership are not publicly available, but the CSRC and MOF have provided them to a team of academic researchers (Lennox, Wang, and Wu, 2020).

In the following subsections, we survey the studies that have utilized these novel data and the regulatory shocks to audit firm size.

4.1.2. Data on individual signatory auditors

Researchers have used the data on signatory auditors to examine two research questions: 1) Does the auditor’s identity make a difference to audit outcomes? 2) Is audit quality impaired by the social connections that signatory auditors have with their clients?

1) Does the identity of the signatory auditor make a difference to audit outcomes?

In their survey of the auditing literature, DeFond and Zhang (2014) call for research on how individual auditors impact audit quality. China researchers have responded to this call by using the country’s data on signatory auditors to examine the relation between individual auditors and audit quality. Gul, Wu, and Yang (2013) argue that the identity of the signatory
auditor makes a difference to audit outcomes because individual auditors impose their own styles on the audit process. The study identifies auditor style effects by testing the statistical significance of signatory auditor fixed effects, while controlling for client fixed effects, audit firm fixed effects, audit office fixed effects, and year fixed effects. Finding significant fixed effects for signatory auditors, the study concludes that individual auditors impose their own styles on their clients’ financial reporting.

Other studies examine individual auditors’ observable characteristics rather than their unobservable time-invariant fixed effects. Consistent with audit outcomes varying across individual auditors, Li, Qi, Tian, and Zhang (2017) find that individual auditors are associated with low quality audits in the future if they conducted failed audits in the past. Similarly, Chen, Chen, Chin, and Lobo (2020) find that clients report more comparable earnings when they share the same signatory auditor. Overall, the evidence from these studies indicates that the properties of financial reporting are clustered around the clients of a given signatory auditor, which is consistent with individual auditors impacting their clients’ financial reporting.

2) *Is audit quality impaired by the social connections that signatory auditors have with their clients?*

Lacking data on individual auditors, U.S. studies have tested whether audit quality is impaired by connections between audit firms and their clients (Menon and Williams, 2004; Lennox, 2005; Naiker and Sharma, 2009; Naiker and Sharma, 2013). For example, a connection between an audit firm and a client is identified if the client’s executive is a former employee of the audit firm. China studies have contributed to this literature by examining connections at the level of the individual signatory auditor. For example, a connection exists between a signatory auditor and a client executive if the auditor and executive previously attended the same

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85 Gul, Wu, and Yang (2013) find little evidence that auditor style effects are linked to auditors’ observable characteristics.
university. China studies find lower quality auditing and lower quality financial reporting when individual auditors are connected with their clients through prior university connections (Guan, Su, Wu, and Yang, 2016; He, Pittman, Rui, and Wu, 2017). That is, connections are associated with lower earnings quality, more overstatements of income, smaller earnings response coefficients, fewer modified audit opinions, and more financial reporting irregularities.

3) Limitations of the data on signatory auditors

There are some limitations with using the data on signatory auditors. First, auditors may behave more ethically or diligently when their names are in the public domain compared to when their names are hidden (Carcello and Li, 2013; Cunningham, Li, Stein, Wright, 2019). Thus, the evidence from China - where auditors’ names are publicly disclosed - may not generalize to jurisdictions in which the names of individual auditors are not publicly identified.

Another limitation is that auditors are not randomly assigned to clients. Thus, the findings of some studies could reflect a client selection effect rather than a causal effect from the individual auditor. For example, Chen, Chen, Chin, and Lobo (2020) document that clients report more comparable earnings when they share the same signatory auditor. They interpret this finding as evidence that signatory auditors impose their own styles on the client’s financial reporting. However, an alternative interpretation is that auditors are assigned to clients with similar characteristics. In other words, the clients of a given auditor could have similar financial reporting

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86 The undesirable effects of social connections are also evident in non-audit settings. For example, Gao, Wong, Xia, and Yu (2021) study school ties between mutual fund managers and the managers of fund investees. The authors find that while university connections confer information advantages on the mutual funds, fund favoritism towards connected investees leads to fund underperformance which is to the detriment of mutual fund investors.

87 Three other studies use the data on signatory auditors. Huang, Raghunandan, Huang, and Chiou (2015) find significant fee discounts when signatory auditors are changed together with the audit firm, but there are no significant fee discounts when the audit firm is changed without a change in the signatory auditor. The study concludes that a new client’s familiarity with the signatory auditor mitigates the audit firm’s need to offer a lower fee to a new client. Chen, Peng, Xue, Yang, and Ye (2016) find that audit firms strategically change how they assign signatory auditors to clients in order to reduce the issuance of unfavorable audit opinions. Cheng, Wang, Xu, and Zhang (2020) find that clients switch from equity financing to credit financing after their signatory auditors suffer reputational damage.
characteristics even if they did not share the same auditor because such clients tend to have more similar economic characteristics.\textsuperscript{88}

Finally, the names of U.S. partners have been publicly available since 2017. Therefore, the Chinese data on signatory auditors are much less novel than they used to be.\textsuperscript{89} Given that the same data are now available in the U.S., we expect that future China research will need to be more creative in how they use the data. As will be discussed in the next few sections, there are plenty of other sources of novel data that will help China studies open up new lines of inquiry.

4.1.3. Data on year-end audit adjustments

Since 2006, the MOF has required Chinese audit firms to privately disclose the pre-audit values of pre-tax earnings and total assets. A major benefit of the pre-audit data is that they can be used to compute year-end audit adjustments (i.e., an adjustment is the difference between the pre-audit and audited number). Thus, researchers have been able to measure how reported earnings are altered during the year-end audit. In contrast, other proxies for audit outcomes such as abnormal accruals or accounting restatements cannot directly capture what happens during an audit.

Researchers have utilized the audit adjustment data in a couple of ways. First, studies have examined the effect of audit adjustments on earnings quality (Lennox, Wu, and Zhang, 2016; Lennox, Wang, and Wu, 2018). Second, studies have used audit adjustments as a proxy for audit quality (Lennox, Wu, and Zhang, 2014; He, Kothari, Xiao, and Zuo, 2018). The distinction between

\textsuperscript{88} Recent U.S. studies find that clients are more likely to share the same audit partner if they operate in the same product market (Bills, Cobabe, Pittman, and Stein 2020; Kang, Lennox, and Pandey 2020). Thus, clients may have more similar financial reporting properties because they operate in the same product market rather than because they share the same partner.

\textsuperscript{89} Unlike the CICPA in China, the PCAOB is not providing investors with additional information about the backgrounds of signatory auditors (e.g., their years of experience or past penalties).
earnings quality and audit quality is an important one, so we discuss these two lines of research separately.

1) How do audit adjustments affect earnings quality?

Lennox, Wu, and Zhang (2016) examine how audit adjustments affect various earnings quality attributes: earnings smoothness, earnings persistence, accrual quality, and the discontinuity in the earnings distribution around zero. The study compares the attributes of audited and pre-audit earnings for the same client-year, thereby holding constant any economic factors (e.g., product market competition, growth) affecting earnings. The study finds that audited earnings are smoother and more persistent than pre-audit earnings, and audited accruals are more predictive of future operating cash flows than pre-audit accruals. However, audit adjustments have no effect on the discontinuity in the earnings distribution around zero, which suggests that either the discontinuity is not a reliable indicator of earnings management, or auditors in China do not mitigate this form of earnings management.

Lennox, Wang, and Wu (2018) examine a setting (equity-financed acquisitions) in which managers are strongly motivated to overstate earnings. Using a DID design in which equity-financed acquisitions are the treatment group and a matched sample of cash-financed acquisitions are the control group, the study finds that auditors require larger downward adjustments to earnings in the period immediately before the announcement of equity-financed acquisitions. The study concludes that downward audit adjustments mitigate the tendency of managers to overstate earnings prior to equity-financed acquisitions. Overall, the findings from these studies indicate that audit adjustments help to improve earnings quality.

2) Audit adjustments as a proxy for audit quality

DeAngelo (1981) defines an audit as being of higher quality if the audit has a higher probability of detecting and correcting an existing misstatement. Audit adjustments fit naturally
with DeAngelo’s (1981) definition because an adjustment signifies that a misstatement was discovered and corrected before the audited financial statements were issued to investors. Therefore, researchers have used audit adjustments as a proxy for audit quality.

Lennox, Wu, and Zhang (2014) use the audit adjustment data to examine how audit quality is affected by the mandatory rotation of signatory auditors. Proponents of mandatory rotation argue that rotations can improve audit quality by introducing a fresh approach to the audit. Consistent with this argument, the study finds that adjustments occur more often during the incoming auditor’s first year of tenure following mandatory rotation. In addition, adjustments occur more often during the incumbent auditor’s final year of tenure prior to mandatory rotation, which suggests that an upcoming rotation motivates the departing auditor to clean up the client’s financial statements before handing the engagement over to a new auditor.

He, Kothari, Xiao, and Zuo (2018) is another study that uses audit adjustments as a proxy for audit quality. The study argues that the quality of the signatory auditor is related to macroeconomic conditions at the time the signatory auditor first entered the labor market. The study predicts a higher level of professional skepticism, and therefore more audit adjustments, among auditors who entered the profession during an economic recession. Consistent with this prediction, the study finds more audit adjustments by signatory auditors who began their careers during a recession. Moreover, the clients of recession-entry auditors are less likely to be sanctioned for misreporting, which further supports the contention that these auditors supply higher quality audits.\(^9\)

3) Limitations of the data on audit adjustments

\(^9\) It is also possible that the auditor’s time of entry into the profession may be correlated with auditor quality because auditors likely have higher ability if they are able to receive job offers during a recession when demand is low.
Audit adjustments have certain limitations and pitfalls that need proper consideration. First, the audit adjustment data can only capture how a client’s financial statements are altered during the year-end audit. The data cannot be used to determine how a client’s financial reporting choices are impacted by the threat of a future audit. Thus, the audit adjustment data can capture only part of the overall impact of auditing on financial reporting.

A second limitation is that audit firms are not required to report the entire pre-audit financial statements to the MOF. Instead, they report a few select line items, such as pre-tax earnings and total assets. Consequently, researchers are unable to examine the different components of the adjustments. For example, researchers cannot determine whether the recorded adjustments to earnings are prompted by adjustments to sales revenues, asset impairments, or other line items. Moreover, researchers can only measure the aggregate net adjustments. They cannot identify the specific transactions that resulted in earnings being adjusted downwards or upwards.

Third, researchers only have access to data on recorded audit adjustments. They do not have data on the adjustments that auditors proposed, but which were subsequently waived during negotiations with the client.\footnote{Choudhary, Merkley, and Schipper (2020) obtain a proprietary U.S. dataset of audit adjustments from the PCAOB. An advantage of their data is that the PCAOB provides information on both recorded and waived adjustments, whereas China researchers only have information on recorded adjustments. On the other hand, the PCAOB data are only available for inspected engagements and the PCAOB does not record whether an adjustment has a negative or positive effect on earnings. Therefore, there are pros and cons with using the PCAOB data relative to the Chinese data.} Therefore, China studies cannot use the audit adjustment data to examine how auditor-client negotiations over contentious financial reporting matters are resolved.\footnote{Church, Dai, Kuang, and Liu (2020) argue that auditor-client negotiations are more fractious when signatory auditors are narcissistic because narcissists lack empathy when they negotiate with other people. The study measures auditor narcissism using the size of the auditor’s signature. Consistent with auditor-client negotiations being more fractious when auditors are narcissistic, the study finds a positive association between audit delay and the auditor’s signature size.}
Finally, when studies use audit adjustments as a proxy for audit quality, they should consider whether their variable of interest \((X)\) might instead be capturing the quality of the client’s pre-audit financial reporting. For certain \(X\) variables, it may be difficult for a researcher to disentangle whether the correlation between audit adjustments and \(X\) is driven by a client’s pre-audit reporting quality or by audit quality. For example, if a researcher finds a significant association between audit adjustments and corporate governance, it will be difficult to determine whether the association is driven by the effect of governance on the quality of the client’s pre-audit financial reporting or the effect of governance on audit quality.

4.1.4. Data on the equity ownership stakes of engagement quality reviewers

The CSRC and MOF collect proprietary data on the names of engagement quality (EQ) reviewers and the ownership stakes of each firm’s equity partners. These data were provided to Lennox, Wang, and Wu (2020) who posit that EQ reviewers have stronger incentives to monitor audit quality when EQ reviewers have larger equity stakes. Consistent with equity ownership motivating EQ reviewers to monitor audit quality more strictly, the study finds a positive association between audit adjustments and the ownership of EQ reviewers. The study is notable for providing the first evidence on audit partners’ equity stakes, but it does not examine other types of partner incentives, such as cash compensation, promotions, and demotions.

4.1.5. Regulatory shocks to audit firm size

In most countries, audit markets are dominated by the international Big 4 firms. In contrast, China’s audit market has historically been fragmented, with a large number of small domestic audit firms and no dominant presence from the Big 4. In the late 1990s, the government introduced a series of reforms that required audit firms to meet minimum size thresholds. The reforms triggered a wave of mergers as audit firms scrambled to meet the size requirements. Researchers have examined how these mergers affected audit quality and audit efficiency.
1) How did audit firm mergers affect audit quality?

DeAngelo (1981) argues that audit firms have stronger reputational incentives when they have more publicly listed clients. It has proved difficult for U.S. studies to test this theoretical prediction because the client portfolios of large audit firms are very different from those of small audit firms. In other words, there is a risk that U.S. researchers may incorrectly attribute unobserved client characteristics to the effects of audit firm size. Chan and Wu (2011) mitigate this endogeneity concern by examining the sudden increases in audit firm size that resulted from the wave of audit firm mergers in China. Based on DeAngelo’s (1981) theory, Chan and Wu (2011) predict an improvement in audit quality when a merger increases the number of publicly listed clients at the merged firm. To test this prediction, the study distinguishes between multilicence mergers (where both of the merging firms were licensed to audit public firms) and single license mergers (where only one of the merging firms was licensed to audit public firms). Consistent with mergers improving audit quality only when the merged firm experiences an increase in the number of publicly listed clients, the study finds a significant increase in modified audit opinions subsequent to multilicence mergers, but no significant change in modified audit opinions following single license mergers.

Although Chan and Wu (2011) use a DID design to strengthen their causal inferences, they are unable to control for the idiosyncratic (and likely endogenous) characteristics of mergers. For instance, they are unable to control for the fact that some mergers might be more (or less) disruptive than others. He, Kothari, Xiao and Zuo (2021) introduce a stronger research design by combining the DID approach with merger fixed effects in order to control for the idiosyncratic characteristics of each individual merger. Their research design can be explained as follows: suppose audit firm A merges with B to become AB. Before the merger, A and B have clients in industries 1 and 2; A was a specialist in industry 1 whereas B was a specialist in industry 2. If the
merger facilitates the transfer of industry-specific knowledge between A and B, audit quality would improve for A’s clients in industry 2 (where B was a specialist before the merger but A was not) and for B’s clients in industry 1 (where A was a specialist before the merger but B was not). In contrast, there would be no change in audit quality for A’s clients in industry 1 or B’s clients in industry 2 because both firms were already specialists in those industries before the merger. Using this highly innovative design, He, Kothari, Xiao and Zuo (2021) find that audit firm mergers facilitate industry-specific knowledge transfers and thereby improve audit quality.

2) How do audit firm mergers affect audit efficiency?

Gong, Li, Lin, and Wu (2016) examine the impact of audit firm mergers on audit efficiency, where efficiency is measured using the audit hours data that audit firms report to the CICPA. Using a DID design in which merger (non-merger) observations are assigned to the treatment (control) group, the study finds a significant reduction in total audit hours for the treatment group subsequent to the merger. The study concludes that audit firm mergers lead to improved audit efficiency.

We find their conclusion surprising because, if mergers enhance efficiency, one would expect audit firms to merge voluntarily rather than wait for the government mandate. An alternative explanation for the observed reduction in total hours is that the merged firms lay off their junior audit staff, with senior auditors being more difficult to remove due to their entrenched positions. A merger would then result in less utilization of junior auditors (who work more hours on average) and increased utilization of senior auditors (who work fewer hours on average). This pattern of restructuring may explain why total hours decrease subsequent to audit firm mergers. It could also explain why Gong, Li, Lin, and Wu (2016) find an increase in the average fee-per-hour charge out rate (and no decrease in total audit fees) subsequent to the merger. In other words, the average charge-out rate would increase if the merged firm switches
away from junior labor to more senior labor given that senior auditors have higher charge-out rates than junior auditors.

4.1.6. Opportunities for future audit research

We offer three suggestions for future research using China’s novel data. These suggestions are not meant to be exhaustive as there are likely to be other sources of novel data of which we are not yet aware.

1) Who are the leaders of auditing firms?

We know little about how audit firms select partners to carry out senior leadership roles at their firms. For example, do partners in leadership roles have backgrounds that emphasize business development and consulting or do they have backgrounds in public company auditing? How important is tone at the top among audit firm leaders for the quality of audit work by personnel at lower levels of the audit firm? How did the leaders of audit firms perform when they previously served as engagement partners at clients? How much weight do audit firms put on audit quality versus commercial criteria when they make partner promotion and demotion decisions? More generally, how do audit firms decide which individuals to promote to the audit partner level?

2) Do audit firm mergers result in integration problems and less competition?

Previous studies have examined how audit firm mergers affect audit quality and audit hours (Chan and Wu, 2011; Gong, Li, Lin, and Wu, 2016). We see opportunities for more research on the consequences of audit firm mergers. We expect that mergers might result in restructuring and integration issues as the merged firm combines the operations of two pre-merger firms. Integration challenges could hinge on whether the merger was entirely voluntary or it was prompted by government fiat. There are also opportunities for researchers to examine how clients
responded to the potentially disruptive effects of mergers. Further, we do not know whether the
wave of audit firm mergers made the Chinese audit market less competitive, and whether less
competition has helped to strengthen auditor independence.

3) What are the pros and cons of having self-regulated inspections of audit firms?

In the U.S., the PCAOB carries out independent inspections of audit firms. Before the
PCAOB was established, audit firm inspections were administered by the AICPA in a self-
regulated system of audit oversight (Hilary and Lennox, 2005). China’s system of audit oversight
is similar to the former U.S. system in the sense that Chinese audit firms are inspected by a
professional body (i.e., the CICPA) rather than by an independent regulator.93 For researchers
interested in the pros and cons of self-regulation, China offers some distinct advantages due to
the availability of novel data. Data are available on the identities of the inspectors as well as the
names of the audit firms that employ them. (Most inspectors are full-time employees of audit
firms who conduct inspections while on a temporary secondment to the CICPA.) In addition,
researchers are able to identify which audit engagements are selected for inspection. These novel
data could allow for new lines of inquiry.94 For example, researchers could investigate whether
the seniority, expertise, and industry knowledge of the inspectors affect which engagements are
selected for examination and the outcome of the inspection. Researchers could also examine
whether the inspectors try to strategically benefit their own audit firm through the inspection
process. For example, the inspectors might try to win clients for their audit firms by finding

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93 The CICPA inspects public company audit firms every three years in a program of inspections that began in 2004. Depending on the results of an inspection, the CICPA can impose various types of penalties, including suspensions of CPA licenses, public criticisms, and mandatory training.

94 Different from China, audit inspectors in the U.S. are full-time employees of the PCAOB and their identities are unknown to researchers.
deficiencies on the engagements of their close competitors. Alternatively, inspectors might use their connections with fellow CICPA inspectors to secure job opportunities at other audit firms. If so, audit firms may stop their most prized employees going on secondment to the CICPA in case they are poached by a competitor.

4.2. Regulatory reforms to corporate governance

China has introduced a series of reforms aimed at strengthening its system of corporate governance. In 2004, China passed the segmented voting reform (SVR), which requires major corporate decisions (e.g., equity offerings) to receive separate voting approval from minority shareholders. The SVR gave minority shareholders the power of veto over key corporate decisions.

In 2005, the government aimed to further improve corporate governance by removing the split share ownership structures that had previously existed at publicly listed firms. Prior to 2005, only newly issued shares could be traded in the secondary market. The shares of incumbent shareholders (e.g., state-owned shares at SOEs and founders shares at non-SOEs) were not tradable and could only be sold via auctions or private negotiations after receiving government approval. The split share structures were in part a legacy of the government’s earlier program of partial privatizations. Specifically, the government had retained close control of the partially-privatized SOEs by prohibiting incumbent shareholders from selling their shares on the secondary market. Consequently, publicly listed firms had non-tradable as well as tradable shares. The split share structures had been a major source of corporate governance problems because the holders of non-tradable shares could not easily profit from an increase in the price of

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95 The CICPA does not allow an individual inspector to belong to a team that is in charge of inspecting their own audit firm. However, an individual inspector can belong to a team that inspects an audit firm that is a close competitor of the inspector’s own audit firm.
tradable shares and so they instead sought to earn a return on their equity by expropriating wealth from minority shareholders (Jiang, Lee, and Yue, 2010). The government decided to rectify this problem in 2005 by allowing non-tradable shares to become tradable, in what became known as the split share structure reform (SSSR).

In 2007, the government launched a campaign to enforce corporate compliance with the Code of Corporate Governance (CCG). The Code had been in existence since 2002, but there was widespread non-compliance due to a lack of proper enforcement. In 2007, the government announced that listed firms would have to fully disclose their corporate governance weaknesses in anticipation of on-site inspections by regulators, who issued penalties to firms whose disclosures were found to be inadequate.

In this section, we describe the evidence relating to the 2004 segmented voting reform (SVR), the 2005 split share structure reform (SSSR), and the 2007 enforcement campaign of the CCG. Further, we describe the challenges that researchers have faced when examining the effects of these three reforms.

4.2.1. The corporate governance reforms

Chen, Ke, and Yang (2013) find that equity issuance proposals are less likely to be value-decreasing following the segmented voting reform (SVR). Moreover, the decrease in value-decreasing equity issuance proposals is found to be larger at firms with high mutual fund ownership. Thus, the study concludes that the SVR led to improved corporate governance at firms with greater monitoring by mutual fund investors.

Several studies have examined the effects of the split share structure reform (SSSR). Liao, Liu, and Wang (2014) view the SSSR as an extension of the government’s earlier privatization program because it enabled the government to sell more of its (formerly non-tradable) shares on the secondary market. The study argues that the threat of future share sales motivates SOEs to
improve their performance. Using a DID design (with non-SOE firms as the control group), the study finds increases in SOE output, profitability, and employment subsequent to the SSSR. However, the study finds no significant changes in SOE ownership structures, operating efficiency, or related party transactions.

Although Liao, Liu, and Wang (2014) posit that the SSSR affected SOEs (using non-SOEs as the control group), the SSSR actually eliminated the split share ownership structures at all listed firms (i.e., SOEs and non-SOEs alike). In contrast to Liao, Liu, and Wang’s (2014) comparison of SOEs and non-SOEs, Hope, Wu, and Zhao (2017) argue that the SSSR led to an increased threat of share sales by large shareholders and the increased threat motivates firms to improve their performance. The study tests this argument using a DID design, in which firms with (without) large shareholders are assigned to the treatment (control) group. As predicted, Hope, Wu and Zhao (2017) find a relative improvement in performance following the SSSR among firms with large shareholders compared to firms without large shareholders.96

Ke and Zhang (forthcoming) examine the effect of the 2007 campaign to enforce compliance with the CCG. The study finds that the enforcement campaign led to improved corporate governance, and firms with larger governance improvements experienced bigger reductions in earnings management, higher earnings response coefficients, and improved operating performance.

4.2.2. Challenges and limitations

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96 The SSSR required the holders of non-tradable shares to compensate tradable shareholders in return for receiving the right to convert their non-tradable shares into a tradable form. Typically, the compensation agreements stipulated that the (formerly non-tradable) shareholders would pay more compensation if their firm failed to achieve the specified earnings targets. Consistent with firms managing earnings upward to meet/beat these earnings targets, Hou, Jin, Yang, Yuan, and Zhang (2015) find significant associations between measures of upward earnings management and dummy variables capturing a firm’s closeness to its earnings targets.
Studies of the above three reforms face a common set of identification challenges. Perhaps the most important is that the reforms applied to every listed firm. Thus, researchers have been unable to utilize control groups of unaffected firms. To mitigate this difficulty, researchers have interacted their pre-post reform variable \( POST \) with a variable that captures a firm’s expected sensitivity to the reform \( X \), as shown in eq. (1).

\[
Y = b_0 + b_1 X \times POST + b_2 X + b_3 POST + v \tag{1}
\]

For example, the \( X \) variable is an indicator that switches on (off) for SOE (non-SOE) firms in the SSSR study of Liao, Liu, and Wang (2014), whereas the \( X \) variable is an indicator that switches on (off) for firms with (without) large shareholders in the SSSR study of Hope, Wu and Zhao (2017).

Three important implications follow from the formulation shown in eq. (1). First, studies have been unable to estimate the total effect of each reform because they lack a control group of unaffected firms. In other words, the \( X \times POST \) variable does not capture the entire effect of the reform. Instead, it captures the difference in the effect of the reform between the more sensitive and less sensitive firms. Second, studies face the problem of confounding events to the extent that the effects of \( X \) on \( Y \) are time-varying between the pre- and post-periods for reasons that are unrelated to the reform. For example, the SOEs and non-SOEs in the study of Liao, Liu, and Wang (2014) might exhibit time-varying differences in performance that have nothing to do with the introduction of the SSSR. Lastly, eq. (1) is subject to potential bias because the \( X \) variables are endogenous. For example, the \( X \) variable is: mutual fund ownership in the SVR study of Chen, Ke, and Yang (2013); government ownership in the SSSR study of Liao, Liu, and Wang (2014); large shareholders in the SSSR study of Hope, Wu, and Zhao (2017); and, corporate governance improvements in the CCG study of Ke and Zhang (forthcoming).

Another methodological challenge is that the three reforms were introduced only a short time apart: the SVR was introduced in 2004, the SSSR in 2005, and the CCG enforcement campaign
in 2007. The clustering in event time makes it challenging for researchers to identify which reform is driving the observed change in firm behavior. The identification problem is especially tricky because each reform was passed for essentially the same reason, i.e., to improve corporate governance. Another timing complication is that the SSSR may have had anticipatory effects before 2005. Indeed, the Chinese government had been experimenting with alternative ways to sell its non-tradable shares in SOEs as far back as 1999. Therefore, it is likely that the SSSR would have been anticipated in advance of its implementation in 2005. This could explain, for example, why Liao, Liu, and Wang (2014) find no change in the operating efficiency of privatized SOEs and no change in their related party transactions after the SSSR was implemented in 2005.

4.3. Novel data and regulatory reforms: Financial analysts

Financial analysts are a relatively new phenomenon in China. Indeed, the professional body for analysts - the Securities Analysts Association of China (SAAC) - was established only in 2000. Since that time, the number of sell-side analysts covering Chinese firms has grown tremendously (see Table 4). Today, China is home to some of the world’s largest brokerage houses.

Although the analyst industry is relatively new in China, there are some similarities with the U.S. market. Many Chinese analysts have experience of studying or working overseas and industry practices are strongly influenced by the U.S. (Gu, Li, and Yang, 2013). Similar to the U.S.,

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97 In 1999, the government conducted a pilot experiment of share sales at ten publicly listed SOEs. However, the pilot scheme was quickly abandoned when the market reacted negatively to the planned prices of the share sales (Liao, Liu, and Wang, 2014). In 2001, the government announced plans for further sales of SOE shares but the market reacted negatively to the prospect of a sudden increase in share sales on the secondary market. The government cancelled the share sale plans in 2002 (Calomiris, Fisman, and Wang, 2010).

98 Only 26% of firms were followed by at least one analyst in 2002, but this figure increased to 60% by 2018. Among firms covered by at least one analyst, the mean (median) number of analysts was just 1.2 (1) in 2002, compared to 10.9 (6) in 2018.

99 See Bloomberg News report on August 13, 2020, “Seven of World’s 10 Most Valuable Securities Firms Are Chinese.”
the earnings forecasts and stock recommendations of Chinese analysts tend to be over-optimistic (Gu, Li, and Yang, 2013; Huyghebaert and Xu, 2016). Analysts in China have incentives to keep firm insiders happy in order to cultivate good relations and secure access to inside information (Gu, Li, and Yang, 2013). In 2007, China followed the U.S. by introducing Regulation Fair Disclosure (Reg FD), which prohibits firm insiders from providing material price-relevant information to select analysts and investors. However, the enforceability of Reg FD is in question (for both China and the U.S.) because firm insiders are permitted to communicate with investors and analysts in private meetings and telephone calls. In the U.S., Institutional Investor magazine publishes a ranking of All-Star sell-side analysts based on survey responses from buy-side fund managers. Similarly, a leading Chinese business magazine, New Fortune, publishes an annual ranking of Chinese analysts based on polls of managers at large financial institutions. Analyst rankings in both countries have become a highly influential metric of relative performance. An important difference between the Chinese and U.S. brokerage industries, however, is that some of the largest brokerage houses in China are state-owned.

China studies have exploited two sources of novel data on financial analysts that are unavailable (or difficult to obtain) in the U.S. setting: 1) the trading commission fees that brokerage houses receive from mutual funds, and 2) the site visits that analysts (and investors) make to listed firms. Moreover, researchers have examined how China’s market-based reforms have affected analyst independence. We begin by describing the studies that have exploited these novel data and regulatory shocks, before offering some suggestions for future research.

4.3.1. Do trading commission fees impair analyst independence?

It has long been recognized that financial analysts tend to issue overly optimistic stock recommendations (e.g., Lin and McNichols, 1998). One explanation for the over-optimism is that
analyst independence is compromised by the trading commission fees that brokerage firms receive from institutional investors. Outside of China, researchers have been unable to test this explanation directly because the data on trading commission fees are not publicly disclosed. In China, the CSRC requires mutual funds to publicly disclose how much they pay in trading commission fees to brokerage houses. Thus, China studies have been able to test how trading commission fees affect analyst independence.

The extant evidence supports the view that analysts are more over optimistic in their stock recommendations when their brokerage houses receive higher trading commission fees from mutual funds with positions in the recommended stocks (Gu, Li, and Yang, 2013; Firth, Lin, Liu, and Xuan, 2013). Further, it appears that investors understand the threats posed by high trading commission fees because, when analysts with compromised independence issue strong buy recommendations, investor reactions are weaker and mutual funds are less likely to increase their ownership (Gu, Li, and Yang, 2013; Firth, Lin, Liu, and Xuan, 2013).

4.3.2. What are the consequences of site visits by analysts and investors?

Managers at listed firms interact privately with analysts and investors through telephone calls and site visits. Private interactions are difficult for U.S. researchers to examine because they are not publicly observable (by definition). However, a couple of U.S. studies have found workarounds. Soltes (2014) uses proprietary data from one U.S. firm during the post-Reg FD era and finds no improvement in analyst forecast accuracy after analysts privately interact with firm managers. Bushee, Gerakos, and Lee (2018) use data on corporate jet flights to proxy for the unobserved site visits of institutional investors. They find significant market reactions around the

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100 A possible explanation for the insignificant change in analyst forecast accuracy is that 85% of the private interactions in Soltes (2014) are telephone calls rather than site visits. Site visits are potentially more informative than telephone calls because a visiting analyst can rely on her own observations rather than the more limited information provided by management under Reg FD.
imputed dates of investor meetings, but do not find that investors are able to generate trading profits from the information obtained during site visits.

China researchers have made significant progress in moving this nascent literature forward. A key advantage of the China setting is that the Shenzhen Stock Exchange (SZSE) requires listed firms to publicly disclose their meetings with analysts and investors. In 2009, the SZSE required firms to briefly summarize the meeting topics in their annual reports and, in 2012, the SZSE further required firms to summarize the meetings (including all questions and answers) within two trading days of the meeting date. Using these data, China studies have been able to provide sharper tests of the impact of private communications with managers on analyst forecast accuracy. Whereas Soltes (2014) finds no improvement in forecast accuracy for U.S. analysts, a major finding of the China literature is that forecast accuracy does improve after analysts meet with firms (Cheng, Du, Wang, and Wang, 2016; Han, Kong, and Liu, 2018). The positive effect of a visit on forecast accuracy is greater when the visiting analyst is located further from the firm, when the current visit is preceded by fewer visits, and when analysts visit firms that are less accessible (i.e., harder to reach via a direct flight) or less well understood (i.e., little media coverage or analyst following).

The China literature also examines whether investors are able to generate trading profits from the information acquired during site visits. Cheng, Du, Wang, and Wang (2019) find significant market reactions around the dates of investor visits, with the short-window market reactions positively predicting the firm’s future performance. Changes in the shareholdings of visiting investors are more predictive of future performance than those of non-visiting investors, which suggests that the stock trading of visiting investors partly drives the short-window market reactions. Bowen, Dutta, Tang, and Zhu (2018) also find significant market reactions around the
visits of investors. Their study goes a step further in showing that the market reactions correlate with the insider trading of firm managers. Specifically, firm managers outperform the Shenzhen market index by selling (purchasing) shares prior to releasing bad (good) news around the dates of the investor meetings. Overall, the findings of Cheng, Du, Wang, and Wang (2019) and Bowen, Dutta, Tang, and Zhu (2018) provide compelling evidence that site visits allow investors and firm insiders to generate significant trading profits.¹⁰¹

While much has been learned from studying the Chinese data on site visits, the data also have some limitations.¹⁰² There is a threat from endogeneity because firms decide whether to host a visit and analysts decide whether to conduct a visit.¹⁰³ China studies have recognized the endogeneity threat and have taken steps to mitigate it. For example, Cheng, Du, Wang, and Wang (2016) demonstrate, using a DID design, that analyst forecast accuracy improves subsequent to site visits, but visiting and non-visiting analysts exhibit no difference in forecast accuracy in the period before the visit. The insignificant result in the pre-visit period suggests that the improvement in forecast accuracy is attributable to information acquired during the visit rather than the effects of selection. Han, Kong, and Liu (2018) tackle the endogeneity issue using extreme weather as an instrumental variable for site visits. Weather has a powerful effect on site visits

¹⁰¹ Whereas institutional investors can visit firms in person, online platforms provide retail investors an important channel to interact with corporate management. Lee and Zhong (2020) find that most online interactions take place as a result of retail investors finding it difficult to integrate and understand information that is already in the public domain. Further, the study finds that increased online interactions between retail investors and managers are associated with a lower cost of capital and increases in market liquidity.

¹⁰² Site visits also offer a novel measure of analyst effort. He, Yin, Zeng, Zhang and Zhao (2019) find that the facial features of financial analysts are related to this measure of analyst effort. Building on a literature in biology which finds that men with wide faces have higher levels of testosterone, the authors predict that male analysts with wider faces have greater achievement drive than those with narrower faces. Consistent with this argument, the study finds that analysts with wider faces are more likely to conduct site visits and perform better on other dimensions of analyst performance (e.g., more accurate forecasts and superior stock recommendations).

¹⁰³ Firth, Lin, Wong, and Zhao (2019) argue that extending an invitation to visit sends a positive signal to outsiders that the firm has nothing to hide. Consistent with visits sending a positive signal, the inviting firms are found to have fewer agency problems; i.e., less tunneling through related-party transactions, less earnings management, a lower probability of fraud, fewer value-destroying acquisitions, and superior performance.
because analysts are less likely to visit when the weather is bad. However, the weather variable may not be a valid instrument because there is evidence that weather can directly affect analyst performance by influencing their mood (DeHaan, Madsen, and Piotroski, 2017).

4.3.3. *The effects of regulatory reforms on analyst independence*

China has introduced many reforms in its transition from an entirely state-run system to a more market-oriented economy (see the Appendix for a timeline of the major reforms). The market-enhancing reforms have undoubtedly provided benefits to China’s economy as a whole. However, as discussed below, two of the reforms, - the SSSR and the reform to IPO offer pricing - could have had a negative impact on analyst independence.

The SSSR allowed the holders of (formerly non-tradable) shares to sell their shares in the secondary market.104 Chan, Jiang, Wu, Xu, and Zeng (2020) argue that large shareholders wanted to sell their shares at a higher price and so they put pressure on underwriter-affiliated analysts to issue overly optimistic recommendations. The study tests this argument using a DID design in which the variable of interest (*AFFANA × SALE*) captures the interaction between affiliated analysts (*AFFANA*) and a dummy variable for the period prior to a sale of shares by large shareholders (*SALE*). Consistent with the SSSR impairing analyst independence, the stock recommendations of affiliated analysts are found to be more optimistic before large shareholders sell their shares.105

China’s change to IPO offer pricing is another market-oriented reform that could have impaired analyst independence. Before 2009 IPO offer prices were set by the CSRC; from 2009 onwards, issuers and investment banks became fully responsible for setting offer prices.

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104 See our discussion of the SSSR in Section 4.2.
105 The study’s sample is from the post-SSSR period only because sales of shares by large shareholders were not permitted during the pre-SSSR period. Consequently, the study is unable to test the consequences of the SSSR using data from before and after the reform.
Huyghebaert and Xu (2016) argue that a decline in the post-IPO stock price after 2009 could prompt investors to blame the investment bank (and issuer) for setting the offer price too high. They further contend that investment banks mitigate the risk of blame by putting pressure on affiliated analysts to issue overly optimistic earnings forecasts during the post-IPO period. Consistent with this argument, the study finds that affiliated analysts are more likely to issue overly optimistic forecasts after the IPO. This result is found to be statistically significant after the IPO reform (i.e., after 2009), whereas it is insignificant before 2009. However, the study does not test whether the association is significantly different between the pre-2009 and post-2009 periods. Thus, it would be premature to conclude that the IPO reform impaired analyst independence.

4.3.4. Opportunities for future research

We see opportunities for future research using China’s novel data on the corporate site visits of analysts and investors.

1) How do alternative sources of private information interact with each other?

Prior research finds that private information can be acquired from site visits (Cheng, Du, Wang, and Wang, 2016; Han, Kong, and Liu, 2018; Cheng, Du, Wang, and Wang, 2019) and from social connections with firm insiders (Gu, Li, Yang, and Li, 2019; Li, Wong, and Yu, 2020). However, site visits and social connections are treated as separate sources of private information in the extant literature. We see opportunities to examine how these information sources interact with each other and how they together impact analyst performance. For instance, social

\[\text{A comparison of regression coefficients for the pre-2009 and post-2009 periods suggests that a DID test would probably not have yielded a statistically significant result. For example, in Col. 1 of Table 5 (Huyghebaert and Xu 2016), the coefficients (p-values) on the variable of interest (Affiliated dummy) are 0.29 (p = 0.19) before 2009 compared to 0.33 (p = 0.03) after 2009. Given the small difference between the coefficients (relative to the size of the coefficient standard errors), it seems unlikely that the coefficients are significantly different between the post-2009 and pre-2009 periods.}\]
connections could affect the incidence of site visits. One possibility is that analysts use their connections with insiders to secure visits and this helps them to become better informed. An alternative possibility is that connections serve as a substitute information channel. For instance, a firm may feel that it can communicate more easily with connected analysts through telephone calls rather than arranging (costly) site visits.

2) What are the consequences of requiring firms to publicly disclose the site visits?

The literature has examined the effects of site visits on analyst forecast accuracy (Cheng, Du, Wang, and Wang, 2016; Han, Kong, and Liu, 2018), stock prices (Cheng, Du, Wang, and Wang, 2019), and insider trading (Bowen, Dutta, Tang, and Zhu, 2018). We see opportunities to examine the consequences of requiring firms to publicly disclose the site visits. We expect the disclosure requirement to affect investor trading behavior by influencing investor perceptions of information asymmetries. Prior to public disclosure, an investor who is not invited for a visit may be unsure whether the firm invited any investors or she was specifically omitted from the list of invitees. Following the public disclosure requirement, an uninvited investor can more easily draw the inference that other investors were invited and she was not, meaning that the uninvited investor would know that she is at an information disadvantage when trading with invited investors. Therefore, the disclosure requirement may make uninvited investors more cautious about trading with better-informed investors.

4.4. Novel data and regulatory shocks: Tax

Researchers in the tax area have also taken advantage of China’s novel data and regulatory shocks. We begin this section by describing the major features of the tax setting in China, before discussing the studies that have utilized China’s novel data and regulatory shocks. We conclude by offering some opportunities for future research.
4.4.1. The tax setting in China

Prior to 1978, there was no system of corporate taxation because all enterprises belonged to the state. A rudimentary form of corporate taxation began in 1979 when SOEs were allowed for the first time to retain a portion of their profits. The profit-retention system was replaced in 1983 with an explicit tax-remittance system.

During the 1980s and early 1990s, there was a high degree of conformity between tax reporting and financial reporting. However, with the growth of China’s stock markets, China responded to investors’ demand for more informative financial reports by moving away from strict book-tax conformity. The first significant departure occurred in 1998 with the introduction of the Accounting Regulation for Listed Companies, which gave managers greater discretion to report book incomes that diverge from taxable incomes. For example, the regulation removed the limits on firms’ bad debt provisions and it allowed firms to choose a depreciation method that best reflects an asset’s useful economic life. There was a further departure from book-tax conformity in 2001, when China issued a revised set of accounting standards (Accounting Standards for Business Enterprises) as part of its preparations to join the World Trade Organization. The standards stated for the first time that firms were allowed to maintain separate accounting records for financial reporting and tax purposes.

In China, government expenditures and tax collections are largely decentralized. While the central government collects taxes to fund national-level expenditures (e.g., education, health care, infrastructure projects, and the military), local governments are responsible for most local expenditures and they retain the residual rights to fiscal revenues within their jurisdictions after fulfilling their tax remittance obligations to the central government. An advantage of this decentralized system is that local governments are able to incorporate local information into their
decision-making. Since taxes are collected by both the central and local governments, there are
two types of collection agency: the State Administration of Taxation (SAT) oversees tax collections
on behalf of the central government, while the Local Taxation Administration oversees tax
collections for the local governments. The efficacy of tax collections and enforcement depends to
a large extent on the conflicting incentives of the central and local governments (Han and Kung,
2015; Chen, 2017; Bradshaw, Liao, and Ma, 2019). For example, in the 1980s and early 1990s, local
governments prioritized local industrial growth, partly because value-added taxes (VAT) from
local industries constituted a significant source of local government revenues. 107 In the mid-1990s
and early 2000s, the central government started to demand larger shares of the VAT and
enterprise tax revenues and local governments responded by shifting their focus away from
promoting local industrial growth to real estate development because tax revenues from selling
land usage rights were not subject to revenue sharing with the central government. Conflicts
between the central and local governments were further exacerbated in 2002 when local
governments were required for the first time to remit a substantial portion of their corporate tax
revenues to the central government. 108 The switch to revenue sharing naturally reduced the
incentives of local governments to collect (and remit) corporate tax revenues to the central
government (Tang, Mo and Chan, 2017).

China studies have been able to make significant contributions to the tax literature using
confidential tax return data from the Chinese tax authorities (Chan and Chow, 1997; Chan and

107 Local government revenues comprise 1) budgetary revenues, which include value-added tax, (income-based)
enterprise tax, and business tax, (2) extra-budgetary revenues (e.g., non-tax fees), and 3) off-budget funds. Only the
first category is subject to revenue sharing with the central government. Since 1998, local governments have been given
exclusive rights to sell the rights to use land. Revenues from land sales are classified as off-budget and are not subject
to revenue sharing with the central government.

108 The central government’s share of locally-collected corporate income tax revenues increased from 0% to 50% in 2002
and from 50% to 60% in 2003 (Han and Kung, 2015).
In the following subsections, we describe how researchers have exploited China’s novel data and regulatory shocks, before highlighting some limitations, and offering suggestions for future research.

4.4.2. Data on tax non-compliance

Tax non-compliance refers to the situation in which a firm is found by the tax authority to have not complied with the tax rules. Chan and Chow (1997) use proprietary data from the Chinese tax authorities to provide the literature’s first evidence on tax non-compliance. The purpose of the study is to examine how the tax authorities enforced China’s transfer pricing rules, which were introduced in 1991 after the government discovered that many foreign firms had been reporting operating losses, which the government interpreted as evidence of widespread tax avoidance. Using data from 81 transfer pricing audits in 1992-1993, Chan and Chow (1997) find that the transfer pricing tax audits were targeted at foreign firms with persistent reported losses and at foreign joint ventures that lacked Chinese partners among the senior management. The study is noteworthy for providing the first evidence on tax non-compliance, although it lacks formal hypotheses and reports only univariate tests rather than formal regressions.

Chan and Mo (2000) contribute to the literature on tax non-compliance by examining the effect of varying the statutory tax rate. In most countries, it is difficult to test how tax rates affect non-compliance because a firm’s tax rate depends on its taxable income, which is a function of

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109 Only a few U.S. studies have been able to exploit confidential tax return data from the Internal Revenue Service (Mills, 1998; Ryan, 2009; Lisowsky, 2010; De Simone, Mills and Stromberg, 2019).

110 China’s transfer pricing law (Income Tax Law for Enterprises with Foreign Investment and Foreign Enterprises) states that the tax authorities are authorized to make reasonable adjustments to reported taxable income when transactions between a foreign investment enterprise and its associates are not made on the same arms-length terms as those involving independent enterprises. The transactions covered by the transfer pricing regulations include the buying and selling of goods, intercompany loans, service fees, and the transfer of property. Similar to the United States, the transfer pricing regulations define associated enterprises based on direct or indirect ownership or control. The permitted transfer pricing methods are similar to those found in developed countries, where the taxpayer has the burden of proving that the chosen transfer pricing method is legitimate.
the firm’s endogenously-chosen tax planning. Chan and Mo (2000) mitigate this problem by exploiting the fact that China has a flat rate tax system, with firms receiving temporary reductions in their tax rates when firms enter a tax holiday. The study finds less compliance in the period before a firm enters the tax holiday, which is consistent with firms shifting profits to the future in order to generate larger tax savings during the tax holiday. Tax compliance increases during the tax holiday, which is consistent with the temporary reduction in the tax rate reducing the firm’s marginal benefit of tax avoidance. A limitation of the study is that it does not have a control sample of firms that do not enter tax holidays; instead, it simply compares the changes in non-compliance over time for a group of firms that receive tax holidays. Therefore, the observed changes in non-compliance could be affected by other time-varying factors that correlate with the onset of tax holidays.111

More generally, a limitation for any study of tax non-compliance is that documented cases of non-compliance are determined jointly by the tax avoidance decisions of the firm and the enforcement activities of the tax authority. In other words, a case of non-compliance occurs when a firm chooses not to comply and the tax authority identifies the noncompliance. The jointly determined nature of the tax non-compliance variable can affect the interpretation of a study’s results. For instance, a complementary explanation for the changes in non-compliance documented in Chan and Mo (2000) could be that the tax authorities scale back enforcement for firms during tax holidays because the authority believes that the lower tax rate during the holiday reduces the marginal benefit of enforcement.

4.4.3. Regulatory shocks: Tax

111 Lacking a control sample of firms that do not enter tax holidays, the study does not include year fixed effects which would otherwise control for time-varying changes in the economy.
China studies have exploited two regulatory shocks in the tax setting: 1) the departures from book-tax conformity in 1998 and 2001, and 2) the 2002 changes to tax revenue sharing between the central and local governments.\(^\text{112}\) Using these shocks, studies have examined how changes in book-tax conformity affect tax non-compliance (Chan, Lin, and Mo, 2010), and how revenue sharing affects tax collections (Tang, Mo, and Chan, 2017).

1) *How do changes in book-tax conformity affect tax non-compliance?*

Proponents of book-tax conformity argue that a close alignment of book incomes and taxable incomes makes it harder for firms to report low taxable incomes to the government while concurrently reporting high book incomes to investors. Therefore, a departure from book-tax conformity can facilitate tax non-compliance. In most jurisdictions, it is difficult to examine the consequences of a change in book-tax conformity because such changes are rare. China is an attractive setting because, as explained earlier (Section 4.4.1), the country experienced two major departures from book-tax conformity in 1998 and 2001.

Consistent with the departures from book-tax conformity facilitating tax non-compliance, Chan, Lin and Mo (2010) find an increase in non-compliance after 1998 and 2001. Although interesting, their study is subject to a couple of limitations, one conceptual and the other methodological. First, the study is silent on the benefits of moving away from book-tax conformity or the reasons for the departure. It seems likely that the government decided to depart from book-tax conformity because it thought that the benefits (i.e., more informative financial reports) would outweigh the costs (i.e., increased tax avoidance). Second, the departures from book-tax conformity in 1998 and 2001 applied to every firm in the economy. Thus, the study lacks

\(^{112}\) We focus on issues related to corporate income tax in this section. Li, Liu, and Ni (forthcoming) explore a dividend tax reform in 2012 that tied individual investors' dividend tax to the length of their share holding period and find that the reform had the effect of discouraging short-term trading by individual investors.
a control group of unaffected firms against which to benchmark the observed changes in tax non-
compliance.

2) How do changes in revenue sharing between the central and local governments affect tax collections?

The U.S. literature on tax avoidance considers the conflicts of interest between shareholders and managers (Hanlon and Heitzman, 2010). In contrast, little is known about the conflicts of interest between central and local governments. Inter-governmental conflicts and externalities could be important in the U.S. setting as well as in China. For instance, tax enforcement at the federal level is likely to have positive spillovers at the state level (and vice versa) because a firm that misstates its federal tax return is likely to also misstate its state tax return. Thus, there can be positive spillovers between the enforcement activities of local and federal tax authorities.

In China, conflicts of interest between the central and local governments were exacerbated by a change to tax revenue sharing in 2002. As noted earlier (Section 4.4.1), local tax revenues used to be collected and fully retained by local governments but, starting in 2002, local governments were required to remit a substantial portion of local-collected revenues to the central government. Tang, Mo and Chan (2017) examine whether the shift to revenue sharing reduced the incentives of local governments to collect (and remit) tax revenues to the central government. The study finds a significant decrease in taxes collected by local governments following the switch to revenue sharing. The reductions in tax collections were larger at SOEs in which the local government’s ownership stake exceeds its share of retained tax revenues. In other

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113 A couple of China studies examine how conflicts of interest between controlling and minority shareholders affect tax avoidance (Bradshaw, Liao, and Ma 2019; Bauer, Fang, Pittman, Zhang, and Zhao forthcoming). Bradshaw, Liao, and Ma (2019) find less tax avoidance at SOEs compared to non-SOEs, suggesting that SOEs having stronger incentives to pay taxes to the government (i.e., the SOE’s major shareholder). Bauer, Fang, Pittman, Zhang, and Zhao (CAR forthcoming) find that controlling shareholders (and their management representatives) create financial reporting opacity in order to expropriate wealth from minority shareholders while at the same time paying less taxes to the government.
words, local governments were especially reluctant to collect (and remit to the central government) taxes from firms in which the local governments had substantial ownership interests.

An open question is how the central government responded to the reductions in tax remittances by the local governments. One might expect an increase in central government monitoring after 2002. Further, the political careers of local tax officials depend at least to some extent on their ability to satisfy the central government’s demands for tax remittances. Therefore, career concerns are likely to limit the extent to which local officials are willing to turn a blind eye to tax avoidance at local government SOEs. Future research can examine how the central government monitors local tax officials and incentivizes remittances to the central government, for example through the use of promotions, demotions, and cash compensation of local tax officials.

4.4.4. Opportunities for future research

We see significant opportunities for further research given the richness of the China tax setting and the access that researchers have to proprietary data from the tax authorities.

1) How is tax non-compliance affected by foreign ownership and the institutional environment?

Future research could investigate whether tax non-compliance hinges upon the presence of foreign ownership. Foreign investors benefit less from the taxes paid to the Chinese government because they usually live overseas. This factor - among others such as cultural obedience and a fear of punishment - could mean that domestic investors have a weaker demand for tax avoidance compared to foreign investors. China’s dual share system – in which A-shares are held by domestic investors and B- and H-shares are held by foreign investors – provides an
opportunity for researchers to directly test this idea. The prediction would be that there is more tax avoidance in the AB- and AH-share firms compared to the pure A-share firms because the latter are not subject to the demand from foreign investors for more tax avoidance. In addition, the China setting would allow researchers to examine whether tax avoidance is affected by the strength of the institutional environment. A- and B-shares are subject to the weak institutional environment of mainland China, whereas H-shares are subject to the relatively strong environment of Hong Kong. To the extent that a strong institutional environment encourages greater compliance, we would expect to find more compliance at the AH-share firms compared to the A- and AB-share firms.

2) How does the basis for tax reporting affect tax planning?

In the U.S., corporate groups are taxed on a consolidated basis. In contrast, the members of Chinese corporate groups are taxed as separate legal entities (i.e., the parent firm and subsidiaries pay their taxes individually). Thus, Chinese groups have incentives to shift taxable incomes from members with high statutory tax rates to members with low statutory tax rates (Shevlin, Tang and Wilson, 2012). We expect the incentives for income-shifting to depend on the extent to which different members of the group face different tax rates. For example, differences in the availability of tax breaks may motivate the parent firm to shift income from high-tax to low-tax paying members. Further, tax-related income-shifting may help to explain the prevalence of inter-group related party transactions in China.

4.5. Regulatory shocks and novel data: The environment
Severe pollution is an unfortunate by-product of China’s economic growth and development. The government has responded to environmental concerns by introducing a raft of regulations aimed at reducing pollution. China studies have exploited both regulatory shocks and novel data when examining environmental issues and their intersection with financial reporting.

One of the reforms (in 2008) requires large listed firms to provide corporate social responsibility (CSR) disclosures, including information about their environmental policies. The CSR disclosure reform did not mandate extra CSR spending or reduced levels of pollution, but Chen, Hung, and Wang (2018) posit that it encouraged the treated firms to voluntarily increase their CSR spending and reduce their pollution. The study tests this prediction using a DID design, in which firms subject to mandatory CSR disclosures belong to the treatment group and unaffected firms belong to the control group. As predicted, the study finds declines in pollution and reduced profitability at the treatment firms after 2008.

A limitation of the study is that other environmental regulations were enacted around the same time as the CSR disclosure requirement. For example, the central government introduced a package of pollution-reducing reforms from 2006 to 2010 as part of its 11th five-year plan (Zhang, Aunan, Martin, Seip, Larssen, Vennemo, Larssen, Feng, Wu, and Xie, 2012). The other pollution-reducing reforms are likely to have had a bigger impact on larger firms, which comprise Chen, Hung, and Wang’s (2018) treatment group and which tend to be the biggest polluters in

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114 For example, China is the world’s biggest emitter of carbon dioxide, according to the World Bank.
115 The CSR disclosure regulation was applied to Shenzhen-listed firms in the Shenzhen 100 Index and Shanghai-listed firms in the Corporate Governance Index. Shanghai’s Corporate Governance Index comprises 230 listed firms with the best governance practices and such firms tend to be relatively large.
116 $SO_2$ emissions fell by 14% during the 11th five-year plan (Schreifels, Fu, and Wilson 2012).
China. Thus, it is uncertain whether the reductions in pollution and profitability are clearly attributable to the mandatory CSR disclosures or to other concurrent reforms.\textsuperscript{117}

Liu, Shen, Welker, Zhang, and Zhao (forthcoming) employ novel plant-level data from *The Environmental Survey and Reporting of China* to examine emissions of sulfur dioxide. Using a staggered DID design, the study finds that emissions increase when firms meet or beat the consensus analyst forecast by two cents or less. The authors conclude that firms pollute more when they are under greater pressure to meet or beat earnings expectations.\textsuperscript{118} The study triangulates its main finding to Chen, Hung, and Wang (2018) by showing that the positive effect of earnings pressure on pollution is smaller among firms that are required to provide CSR disclosures.

4.6. **Novel data and regulatory shocks: Some final remarks**

China’s novel data and unique regulatory shocks have facilitated the examination of research questions that are difficult (or impossible) to study in other settings. In addition, the novel data and regulatory shocks have helped researchers to draw sharper causal inferences. At the same time, the studies in Section 4 tend to examine broad rather than China-specific research questions, which means that questions are often asked about the generalizability of their findings. In this subsection, we provide some final remarks about the ability of China studies to draw stronger causal inferences and the extent to which the evidence may (or may not) be generalizable.

4.6.1. **Causal inferences**

\textsuperscript{117} Chen, Hung, and Wang (2018) seek to mitigate this concern by implementing a PSM procedure to narrow the size difference and testing the parallel trends assumption.

\textsuperscript{118} Similar to the Chinese findings of Liu, Shen, Welker, Zhang, and Zhao (forthcoming), there is evidence that U.S. have less safe work environments for their employees (Caskey and Ozel 2017) and are more likely to steal wages from their employees (Raghunandan 2020) when they are under greater pressure to meet or beat earnings expectations.
Arguably, the biggest challenge for causal inference is the researcher’s lack of access to good data (Leuz, 2018). For example, many auditing studies draw inferences about audit quality using measures of a client’s financial reporting quality rather than direct measures of audit quality. Better data can mitigate the causal inference challenge. For example, China studies have used data on audit adjustments to examine more directly how a client’s reported earnings are altered during the year-end audit. While such data are far from perfect, we believe they are a step in the right direction.

Regulatory shocks are another tool that researchers can utilize to draw stronger causal inferences. For example, researchers strengthen their causal inferences, at least under certain assumptions, by employing difference-in-differences designs. Many of the China studies in our survey attempt to strengthen their causal inferences by exploiting regulatory reforms, with some studies going so far as to claim that the reforms are equivalent to natural experiments. However, none of the studies are true natural experiments because none examine a setting in which observations are randomly assigned to treatment and control groups. Indeed, for many of the reforms, there is no control group whatsoever because the new regulations applied to every single listed firm. In addition, many reforms are concurrent with other related reforms, making clear attribution to a particular regulatory shock difficult.

Other studies in our survey attempt to strengthen their causal inferences by estimating IV regressions. However, such studies seldom justify why their selected instrumental variables can be considered exogenous. Some IV studies do not show that their instrumental variables strongly predict the endogenous regressor, and most do not provide convincing justifications for their exclusion restrictions. Unfortunately, random changes in exogenous variables are generally unavailable, and in our view, this severely limits the usefulness of IV estimation for drawing causal inferences.
On a more constructive note, we believe that regression discontinuity (RD) designs could be employed more often in China research to craft sharper causal inferences. In our survey, we find only one study that uses a regression discontinuity (RD) design (Lyu, Wang, Zhang, and Zhang, 2018). We see this as a missed opportunity. For instance, earnings targets and thresholds have been important features of China’s capital markets for many years, and such targets naturally lend themselves to RD designs. We therefore see opportunities for China studies to make more use of RD designs.

Finally, we see a movement in the China literature during the past 25 years to provide stronger causal inferences. Some of the early China studies in our survey provide only univariate tests or simple cross-sectional regressions. Recent decades have seen a notable shift towards more advanced methodological approaches as well as novel sources of data and regulatory shocks. We expect this trend to continue as policy-makers and researchers demand more compelling causal inferences.

4.6.2. Generalizability

Concerns about generalizability are particularly acute when the setting under examination is highly stylized but the setting is not a central focus. This is the case for many of the studies in Section 4 because their research questions tend to be broader and less focused on China than the studies in Sections 2 and 3. Given their broader perspective, it is understandable that concerns are often raised about whether the findings from such studies can be generalized to other settings.

119 Using a regression discontinuity design, Lyu, Wang, Zhang, and Zhang (2018) find that local government officials are more likely to be promoted if they meet or beat their GDP growth targets.
120 This observation is not meant to be a pejorative. Some of the most impactful studies in the accounting literature adopt a descriptive or evaluative approach rather than testing a causal theory (e.g., Ball and Brown (1968)).
At the same time, it is important to note that generalizability issues are not confined to China studies. Generalizability is an issue for any stylized setting. For example, the Sarbanes-Oxley Act (2002) and the financial crisis of 2008-2009 offer two highly stylized settings that have attracted a lot of attention in the U.S. literature. We view such studies as addressing important topics, even though their findings may lack generalizability to other institutional settings or other regulations. Likewise, the China studies in our survey that capitalize on regulatory shocks (e.g., the split share structure reform) face similar generalizability issues. Nevertheless, we believe that such studies still address important and interesting economic phenomena.

It is worth remembering that many of the studies in Section 4 locate their research in China precisely because the data required to test the underlying research questions are not available elsewhere. At the same time, the lack of available data in other settings can make it difficult to directly test whether the findings are generalizable. As researchers, we are therefore faced with two choices: do we abandon the research question altogether, or do we provide evidence from a setting where the data are available? The downside of the former approach is that the literature may become stagnant and overly focused on a narrow set of research questions. The downside of the latter approach is that the findings from a stylized setting may not be generalizable. We favor the latter approach because, in our view, the generalizability concern can be examined over time by accumulating evidence and comparing results across a variety of settings and studies. More generally we caution against the notion that research questions should only be addressed using one or two institutional settings with which a majority of researchers are familiar.

We emphasize too that whether a study is likely to produce generalizable inferences hinges upon the nature of the theory being tested. For some studies, the findings may turn out to
not be generalizable because the researcher’s theoretical prediction is contingent upon the institutional features of the setting. For other research questions, the institutional features of the setting may not matter for the specific theory under examination. Thus, we caution against a blanket labeling of all China research as either lacking in generalizability, or yielding generalizable insights.

When a study is testing the relationship between Y and X, it is necessary to consider whether there is any theoretical reason to expect the X coefficient to be a function of the institutional features of the setting. We emphasize that it is the coefficient that is of interest, not the mean value of Y. Often, there is no compelling theoretical reason to expect the X coefficient to be contingent on a country’s institutions, even if there is a strong theoretical reason to expect the mean value of Y to be contingent on a country’s institutions. For example, there are good theoretical reasons to think that audit quality (Y) depends on the strength of the country’s civil litigation regime. However, it does not follow that the correlation between audit quality (Y) and partner rotation (X) is also contingent on the civil litigation regime. What matters, then, is the theoretical linkage between Y and X, not the impact of a country’s institutional features on the mean value of Y.

In some situations, there may be good reasons to expect the correlation between Y and X to be contingent on a country’s institutional characteristics. For example, signatory auditors are likely to be more cautious about succumbing to the influence of connections with managers when auditors’ names are in the public domain. Therefore, the results of studies examining the relationship between Y (audit quality) and X (auditor-manager connections) may not extend to institutional settings in which connections are unobservable because auditors’ names are not publicly disclosed. Likewise, analysts are less likely to succumb to the influence of fee pressure
when their fees are publicly disclosed compared to settings in which their fees are not publicly observable. Therefore, the results of studies examining the relationship between Y (analyst independence) and X (fees) may not extend to countries in which X is not publicly disclosed. These are examples where generalizability may be a legitimate concern. For many other studies, however, there may be no strong theoretical reason to expect the correlation between Y and X to be contingent upon the institutional setting.

Further, we note that a given study may produce some insights that are generalizable and other insights that are not generalizable, depending upon the specific theory that is being tested. Consider, for example, a recent China study by Liu (2021) who examines a small business lending setting in which the researcher has access to all the information that loan officers use in their lending decisions. The study finds that loan officers perform worse than a machine learning model in processing hard information, but loan officers have strengths in acquiring soft information. The author concludes that loan officers acquire more soft information when the accounting signal is more salient (i.e., a larger realization), but salience impedes hard information processing due to loan officers being subject to the behavioral bias of representativeness. In terms of generalizability, one may question whether the study’s finding that loan officers perform worse than a machine learning model is specific to the setting because loan officers are at an unusual disadvantage in that they have no access to historical data, an internal credit model, or credit ratings from a third party. In this sense, the research setting is quite unlike other settings and raises a genuine concern about generalizability. On the other hand, the study also finds that accounting salience shifts the attention of loan officers towards acquiring more soft information. We see no theoretical reason to view such behavior as simply an artifact of the setting. Thus, for a study such as this one, the generalizability issue should be considered on a finding-by-finding
basis. It is not appropriate to make sweeping statements about the generalizability of an entire body of literature or even an entire study. Some findings will likely be generalizable, whereas others may not be if the institutional features of the setting have a material bearing on the theory under examination.

We suggest that China researchers can take steps to mitigate concerns about generalizability. One approach is to test whether well-known results from the prior literature extend to China, before building upon the result to make a new contribution to the literature. For example, a seminal U.S. study by Mills (1998) finds that tax non-compliance is positively associated with book-tax differences. Chan, Lin, and Mo (2010) replicate the same positive relationship in China, before using a regulatory shock to show that the positive relationship becomes weaker following China’s departure from book-tax conformity.

As another illustrative example, there is evidence from the U.S. that financial reporting quality failed to improve following the introduction of mandatory internal control audits (Bhaskar, Schroeder, and Shepardson, 2019; McCallen, Schmardebeck, Shipman, and Whited, 2020). Lennox and Wu (forthcoming) replicate the same finding in the China setting. The study then goes on to use audit adjustment data to explain why financial reporting failed to improve. Specifically, the study finds that the requirement for auditors to disclose internal control weaknesses resulted in more auditor-client conflicts, and auditors mitigated these conflicts by making fewer audit adjustments; in turn, the reduction in audit adjustments led to worse financial reporting. Such studies illustrate that China researchers can begin by replicating a well-known

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121 Similar to the U.S. literature, Lennox and Wu (forthcoming) find that auditor disclosures of internal control weaknesses increase the manager’s risk of being fired (Li, Sun, and Ettredge, 2010; Johnstone, Li, and Rupley, 2011) and increase the auditor’s risk of dismissal (Ettredge, Heintz, Li, and Scholz, 2011; Newton, Persellin, Wang, and Wilkins, 2016).
result from the U.S. literature, before going on to make an incremental contribution by applying novel data (Lennox and Wu (forthcoming)) or a regulatory shock (Chan, Lin, and Mo, 2010) to test a new idea.

We are optimistic that many of the findings from the China literature will ultimately be found to generalize to other research settings. There will be opportunities to test whether or not generalizability is a concern when similar data become available in other countries. For example, the identities of audit partners are now publicly available in the U.S. setting, and these data have already been used to test the generalizability of the Chinese evidence on signatory auditors. China researchers can also mitigate concerns about generalizability by comparing their descriptive statistics with the descriptive statistics from other settings. For example, the descriptive statistics for audit adjustments in China are very similar to the descriptive statistics reported in smaller-scale U.S. studies where authors obtained audit adjustment data directly from audit firms.

Finally, we expect that concerns about generalizability are likely to decline over time as China’s economy becomes more similar to what is observed in the West. China’s progress on this dimension has been remarkable. For instance, China’s stock market used to be dominated by SOEs, but nowadays most listed firms in China are non-SOEs (Table 5). Contrary to common perception, Carpenter, Lu, and Whitelaw (2021) find that stock prices in China are now as informative about future profits as they are in the U.S. Moreover, key information intermediaries, such as auditors, financial analysts, and lawyers have become much more important in China over the past two decades (Table 5).122 We expect continued economic development and

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122 The growth in the financial analyst profession is shown in Table 4 and was discussed in Section 4.3.
convergence will help to assuage the concerns about generalizability, particularly as non-China researchers become more familiar with the China setting.

5. Conclusion

China-related accounting research is a fast-growing area that has made a meaningful impact on the accounting literature. China studies constitute an eclectic collection of many different research objectives and topics. Collectively, the studies have contributed to our understanding about China and added to our knowledge on a wide range of non-China specific research questions.

While China studies have been impactful on the academic literature, an unresolved question is the extent to which the research has been used to inform government policy. Definitive evidence in this regard is difficult to find, but anecdotal evidence and casual observation suggest that academic research is likely to have been influential. For example, China recently decided to introduce a market-based registration-and-disclosure system to replace its highly regulated IPO process that is based on CSRC approvals. This is a very significant change in policy that occurred shortly after academic researchers informed policy makers about major limitations with the old administrative system.\(^{123}\) Although the timing of the change in policy is suggestive of a possible impact of academic research, it is difficult to make a direct connection because the exposure drafts of proposed regulations usually do not detail the comments from academic researchers and do not cite their studies.

The presence of a revolving door between academic researchers and the regulatory agencies is another reason to think that academic research may have been influential on policy

\(^{123}\) Adverse consequences of the old system include long wait times and significant outcome uncertainty for IPO applicants, bias against high-growth technology firms, substantial underpricing of IPOs, virtually no de-listings of failed companies, etc. (Cong, Lee, Qu, and Shen, 2018).
making. For example, accounting scholars have worked in the Chief Accountants Office of the CSRC, the CICPA, and MOF, with individual researchers moving back and forth between university positions and the regulatory agencies. The revolving door leads us to conjecture that regulators value the input of accounting scholars when making policies and regulations. However, this remains a conjecture on our part. To better understand this issue, it would be interesting to study the careers of regulators, their social connections and interactions with academia, and how these factors correlate with policy making.

We conclude by noting that there are two general directions for the future growth of the China accounting literature. One direction is more China-centric (e.g., the studies in Sections 2 and 3), while the other is more focused on answering broader non-China-specific research questions (e.g., the studies in Section 4). We see both avenues as promising. On the one hand, there is high value in a China-centric approach. In light of China’s significance to the global economy, it is imperative to analyze and understand China for its own sake. There are encouraging signs that this view is gaining wider acceptance in the accounting academy, and importantly, among journal editors and reviewers. On the other hand, China will continue to serve as an exciting laboratory that supplies unique settings and novel data to test broad research questions that cannot be tested elsewhere. We look forward to both types of research in the future.
References


Lennox, C., Li, B., 2020. When are audit firms sued for financial reporting failures and what are the lawsuit outcomes? Contemporary Accounting Research, forthcoming.


APPENDIX: Timeline of major reforms and events

<table>
<thead>
<tr>
<th>The real economy</th>
<th>The stock market</th>
<th>Financial reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1978</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction of the policy of “Reform and Open-up”, launching China’s economic reform.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction of the “household responsibility system” to replace collective farming.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1979</strong></td>
<td>The first Special Economic Zones (SEZs) created in four coastal cities in Guangdong and Fujian provinces to attract foreign investment.</td>
<td></td>
</tr>
<tr>
<td>The early 1980’s</td>
<td>Introduction of the “fiscal contracting system”, whereby local governments were given residual rights to tax revenues in their jurisdictions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction of the “contract management responsibility system”, allowing profit retention and employee bonuses at SOEs.</td>
<td></td>
</tr>
<tr>
<td><strong>1990</strong></td>
<td>Establishment of the Shanghai Stock Exchange</td>
<td></td>
</tr>
<tr>
<td><strong>1993</strong></td>
<td></td>
<td>Promulgation of “Accounting Standards for Business Enterprises” (ASBE) by the Ministry of Finance.</td>
</tr>
<tr>
<td><strong>1994</strong></td>
<td>Introduction of the Corporate Income Tax Code (corporate income tax was set at a flat rate of 33% for China’s domestic firms).</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1995</td>
<td>Introduction of the SOE reform of “grasping the large and letting go of the small.”</td>
<td>Issuance of new auditing standards by the Ministry of Finance.</td>
</tr>
<tr>
<td>1997</td>
<td>The government introduces reforms requiring Chinese audit firms to be disaffiliated from local governments.</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>Local (prefecture and county) governments given exclusive rights to sell usage rights of arable land for urban development.</td>
<td>China’s first significant departure from book-tax conformity (<em>Accounting Regulation for Listed Companies</em>).</td>
</tr>
<tr>
<td>1999</td>
<td>Enactment of first comprehensive Securities Law. End of the IPO quota system.</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>Establishment of the <em>Securities Analysts Association of China</em> (SAAC), marking the beginning of the financial analyst profession. The government launches a series of reforms (2000-2009) aimed at reducing the number of CSRC-licensed audit firms and increasing their average size.</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>China enters the World Trade Organization (WTO). CSRC issuance of “Guideline for the establishment of the independent director system in listed firms”, requiring 1/3 independent directors in listed companies by 2003. Domestic investors allowed to invest in B shares if they already held foreign currency.</td>
<td>China’s second significant departure from book-tax conformity (<em>Accounting Standards for Business Enterprises</em>).</td>
</tr>
<tr>
<td>Year</td>
<td>Event 1</td>
<td>Event 2</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>2002</td>
<td>A portion of the revenues collected by the local government from corporate income taxes (and valued-added taxes) had to be remitted to the central government.</td>
<td>China’s Supreme Court rules that investors are allowed to file civil actions. Introduction of the Corporate Governance Code.</td>
</tr>
<tr>
<td>2003</td>
<td>Introduction of Qualified Foreign Institutional Investors (QFII) program, allowing select foreign institutions to purchase domestic A shares. Introduction of a law governing the activities of mutual funds (the Law on Funds for Investment in Securities).</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>Notion of private property fully recognized in the Constitution. Small-and-Medium sized Enterprises Board (SME) established within the Shenzhen Stock Exchange, with less stringent listing requirements than the Main Board. The CSRC’s screening committee for IPOs and offerings switched from being dominated by government bureaucrats to having more representation from business professionals. Segmentated Voting Reform (SVR), requiring major corporate decisions (e.g., equity offerings) to receive separate voting approval from minority shareholders.</td>
<td>CICPA launches a program of audit firm inspections.</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>Launch of split-share-structure reform (SSSR), converting non-tradable shares to tradable ones. China amended its Securities Law to write into statute a definition of auditors’ legal responsibilities.</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>The final version of the Bankruptcy Law passed. Firms having completed split-share-structure reform allowed by the CSRC to adopt equity-based incentive plans. China’s auditing standards converged to International Standards on Auditing (ISAs).</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>Introduction of Qualified Domestic Institutional Investors (QDII) program, allowing select domestic institutions to purchase foreign securities. Introduction of a campaign to enforce compliance with the Corporate Governance Code. Promulgation by the MOF of the “New Accounting Standards for Business Enterprises” (New ASBE), which the IASB officially recognized as having substantially converged to IFRS.</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>The CSRC passes new rules strengthening its enforcement against mutual fund managers who violate their fiduciary duties. AB share firms are no longer required to prepare separate B-share financial statements. CSRC issues fair disclosure rule requiring firms to provide full and fair disclosure of material information to all investors.</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>Corporate income tax is set at a flat rate of 25% for China’s domestic firms and foreign firms. The Global Financial Crisis, and the introduction of the economic stimulus plan, that included 1) a fiscal plan involving 4 trillion RMB of investments in infrastructure and social welfare projects, and 2) credit easing. Shanghai and Shenzhen Stock Exchanges introduce mandatory corporate social responsibility (CSR) disclosures for listed firms. Issuance of the Basic Standard for Enterprise Internal Control.</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>Growth Enterprise Market (GEM), also known as ChiNext, established within Shenzhen stock exchange (SZSE) requires listed firms to disclose the</td>
<td></td>
</tr>
</tbody>
</table>
the Shenzhen Stock Exchange, focusing on high-tech, innovative firms, with less stringent listing requirements than the Main Board and the SME Board.

Investment banks and issuers take responsibility for setting IPO offer prices (previously IPO offer prices were set by the CSRC).

Amendment of the Criminal Law to provide a legal basis for prosecuting mutual fund managers who personally profit from trading on inside information.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>AH share firms no longer required to prepare separate H-share financial statements.</td>
</tr>
<tr>
<td>2011</td>
<td>Introduction of the Renminbi Qualified Foreign Institutional Investors (RQFII) program, further opening A-share market to foreign institutions.</td>
</tr>
<tr>
<td>2012</td>
<td>Shenzhen stock exchange (SZSE) requires listed firms to disclose detailed summaries of the matters discussed during private meetings with analysts and institutional investors.</td>
</tr>
<tr>
<td>2013</td>
<td>The government enacts “Rule 18”, which prohibits party and government officials above a certain rank from serving on the boards of publicly listed firms.</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>2014</td>
<td>Launch of Shanghai-Hong-Kong Stock Connect program, allowing investors in each market to trade shares in the other market, under certain quotas.</td>
</tr>
<tr>
<td>2016</td>
<td>Launch of Shenzhen-Hong-Kong Connect program.</td>
</tr>
<tr>
<td>2018</td>
<td>Addition of China A shares to the MSCI Emerging Markets Index.</td>
</tr>
<tr>
<td>2019</td>
<td>Launch of a pilot program by the Shanghai Stock Exchange, replacing the administration-based IPO approval process with a market-based “registration system.”</td>
</tr>
<tr>
<td>2020</td>
<td>The CSRC issued rules allowing class action lawsuits with an “opt-out” rule, similar to the class action regime in the U.S. New Securities Law takes effect, which when fully developed and implemented, is expected to abolish the CSRC’s regulatory approval system for IPOs and do away with sustained profitability as a listing requirement.</td>
</tr>
</tbody>
</table>
**Figure 1. China’s GDP growth relative to benchmark countries**

Panel A. China versus major developed economies in North America and Europe

This panel compares China with major developed economies in North America and Europe (Canada, France, Germany, United Kingdom and United States) in GDP growth from 1990 to 2019.
Figure 1. China’s GDP growth relative to benchmark countries (continued)

Panel B. China versus other major countries in East and Southeast Asia

This panel compares China with other major countries in East and Southeast Asia (Indonesia, Japan, Malaysia, South Korea, Thailand) in GDP growth from 1990 to 2019.
Panel C. China versus other major countries with a history of socialism

This panel compares China with other major countries with a history of socialism (Bulgaria, Poland, Romania, Russia, Vietnam) in GDP growth from 1990 to 2019.
Figure 1. China’s GDP growth relative to benchmark countries (continued)

Panel D. China versus other major developing countries

This panel compares China with other major developing countries (Brazil, India, Mexico, Pakistan, South Africa) in GDP growth from 1990 to 2019.
Table 1. Enforcement actions and accounting lawsuits involving publicly listed companies

<table>
<thead>
<tr>
<th>Year</th>
<th>A-share companies</th>
<th>Public enforcement</th>
<th>Accounting lawsuits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>923</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>2000</td>
<td>1,060</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>2001</td>
<td>1,136</td>
<td>129</td>
<td>0</td>
</tr>
<tr>
<td>2002</td>
<td>1,199</td>
<td>108</td>
<td>5</td>
</tr>
<tr>
<td>2003</td>
<td>1,263</td>
<td>98</td>
<td>0</td>
</tr>
<tr>
<td>2004</td>
<td>1,353</td>
<td>87</td>
<td>4</td>
</tr>
<tr>
<td>2005</td>
<td>1,356</td>
<td>79</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>1,410</td>
<td>64</td>
<td>2</td>
</tr>
<tr>
<td>2007</td>
<td>1,513</td>
<td>62</td>
<td>3</td>
</tr>
<tr>
<td>2008</td>
<td>1,574</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>2009</td>
<td>1,675</td>
<td>81</td>
<td>9</td>
</tr>
<tr>
<td>2010</td>
<td>2,016</td>
<td>93</td>
<td>3</td>
</tr>
<tr>
<td>2011</td>
<td>2,298</td>
<td>157</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>2,453</td>
<td>311</td>
<td>6</td>
</tr>
<tr>
<td>2013</td>
<td>2,466</td>
<td>352</td>
<td>69</td>
</tr>
<tr>
<td>2014</td>
<td>2,591</td>
<td>300</td>
<td>5</td>
</tr>
<tr>
<td>2015</td>
<td>2,806</td>
<td>295</td>
<td>35</td>
</tr>
<tr>
<td>2016</td>
<td>3,032</td>
<td>324</td>
<td>61</td>
</tr>
<tr>
<td>2017</td>
<td>3,461</td>
<td>308</td>
<td>65</td>
</tr>
<tr>
<td>2018</td>
<td>3,563</td>
<td>393</td>
<td>46</td>
</tr>
</tbody>
</table>

Variable definitions:

Public enforcement = public enforcement actions by regulatory agencies alleging financial misreporting. When a case of alleged misreporting results in multiple enforcement actions, we count the case once only.

Accounting lawsuits = civil lawsuits filed by plaintiffs alleging financial misreporting. When a case of alleged misreporting results in multiple lawsuits by different plaintiffs, we count the case once only.

Data source for the above variables: CSMAR.
<table>
<thead>
<tr>
<th>Year</th>
<th>A-share companies</th>
<th>B-share companies</th>
<th>H-share companies</th>
<th>B-Share discount</th>
<th>H-share discount</th>
<th>A/B return correlation</th>
<th>A/H return correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>53</td>
<td>16</td>
<td>1</td>
<td>-52.50%</td>
<td>n.a.</td>
<td>29.31%</td>
<td>n.a.</td>
</tr>
<tr>
<td>1993</td>
<td>176</td>
<td>37</td>
<td>6</td>
<td>-76.90%</td>
<td>n.a.</td>
<td>16.66%</td>
<td>-2.89%</td>
</tr>
<tr>
<td>1994</td>
<td>287</td>
<td>50</td>
<td>10</td>
<td>-54.10%</td>
<td>1.50%</td>
<td>6.90%</td>
<td>5.90%</td>
</tr>
<tr>
<td>1995</td>
<td>311</td>
<td>58</td>
<td>11</td>
<td>-68.90%</td>
<td>-39.00%</td>
<td>8.23%</td>
<td>4.14%</td>
</tr>
<tr>
<td>1996</td>
<td>514</td>
<td>71</td>
<td>16</td>
<td>-66.10%</td>
<td>-66.20%</td>
<td>21.70%</td>
<td>2.72%</td>
</tr>
<tr>
<td>1997</td>
<td>720</td>
<td>81</td>
<td>29</td>
<td>-56.60%</td>
<td>-72.90%</td>
<td>30.51%</td>
<td>4.13%</td>
</tr>
<tr>
<td>1998</td>
<td>825</td>
<td>83</td>
<td>31</td>
<td>-81.70%</td>
<td>-87.20%</td>
<td>12.00%</td>
<td>10.39%</td>
</tr>
<tr>
<td>1999</td>
<td>923</td>
<td>84</td>
<td>32</td>
<td>-83.20%</td>
<td>-86.80%</td>
<td>34.47%</td>
<td>11.61%</td>
</tr>
<tr>
<td>2000</td>
<td>1,060</td>
<td>84</td>
<td>34</td>
<td>-80.40%</td>
<td>-90.20%</td>
<td>38.98%</td>
<td>4.99%</td>
</tr>
<tr>
<td>2001</td>
<td>1,136</td>
<td>84</td>
<td>35</td>
<td>-46.70%</td>
<td>-84.80%</td>
<td>46.15%</td>
<td>14.39%</td>
</tr>
<tr>
<td>2002</td>
<td>1,199</td>
<td>84</td>
<td>37</td>
<td>-48.30%</td>
<td>-80.50%</td>
<td>71.28%</td>
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<td>63.91%</td>
<td>23.63%</td>
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<tr>
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There are three types of shares in China: A, B, and H. A-shares are purchased using RMB and are generally restricted to domestic investors. B-shares and H-shares are purchased using foreign currencies and are generally restricted to foreign investors.

Variable definitions:

A-Share companies = Number of Chinese companies issuing A shares in mainland China.

B-Share companies = Number of A-share Chinese companies issuing B shares to foreign investors in mainland China.

H-Share companies = Number of Chinese companies issuing H shares to foreign investors in Hong Kong.

B-Share discount = Median value of (B-share price – A-share price) / A-share price, where the B share price and A share price are both stated in RMB.

H-Share discount = Median value of (H-share price – A-share price) / A-share price, where the H share price and A share price are both stated in RMB.
A/B return correlation = Mean value of correlation between a firm’s A-share daily returns and the same firm’s B-share daily returns within a year.

A/H return correlation = Mean value of correlation between a firm’s A-share daily returns and the same firm’s H-share daily returns within a year.

Data source for the above variables: CSMAR.
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<td>1996</td>
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Data source for individual CPAs: The Accounting Yearbook of China.
Data source for CPA firms: The Accounting Yearbook of China.
Data source for A-share companies: CSMAR.
Data source for CPA firms licensed to audit public companies: The Accounting Yearbook of China.
<table>
<thead>
<tr>
<th>Year</th>
<th>A-share companies</th>
<th>followed by at least one analyst</th>
<th>A-share companies</th>
<th>followed by zero analysts</th>
<th>Mean</th>
<th>Median</th>
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Data source: CSMAR.
Table 5. A relative decline in SOEs and an increase in information intermediaries

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<th>A-share companies</th>
<th>SOE% (number)</th>
<th>SOE% (market value)</th>
<th>No. of individual CPAs</th>
<th>No. of CPA firms</th>
<th>No. of Lawyers</th>
<th>No. of law firms</th>
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<td>931</td>
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<td>84%</td>
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<td>4,805</td>
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<td>88%</td>
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Data source for A-share companies: CSMAR.
Data source for SOEs: Annual reports of listed companies (CSMAR). A company is defined as an SOE if it is ultimately controlled by the state.
Data source for individual CPAs and CPA firms: The Accounting Yearbook of China.
Data source for lawyers and law firms: China Statistical Yearbook.