NBER WORKING PAPER SERIES

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Chen Lin
Randall Morck
Bernard Yeung
Xiaofeng Zhao

Working Paper 22001
http://www.nber.org/papers/w22001

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
February 2016

The authors thank the editor (Bill Schewert) and an anonymous reviewer for many constructive comments. We are also grateful for comments from Sumit Agarwal, Philip H. Dybvig, Ray Fisman, Hanming Fan, Ali Hortaçsu, Yongmiao Hong, Hongbin Li, Yingyi Qian, and seminar participants at NBER's May 2015 China Economy workshop, the ABFER 2016, the 2nd China-Europe Conference: Transparency, Economic Institutions and Governance, The 2016 Greater China Area Finance Conference, The Chinese University of Hong Kong, Hebrew University of Jerusalem, Hong Kong Monetary Authority, NUS Business School, Lingnan University, the UCLA-Anderson School, the University of Maryland, and the University of Philadelphia. Randall Morck thanks the Bank of Canada for partial funding. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

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NBER Working Paper No. 22001
February 2016, Revised June 2016
JEL No. D70,G34,G38,P2

ABSTRACT

Chinese shares rose sharply on a 2012 announcement initiating an anticorruption campaign. More productive nonSOEs in high Q industries and greater external finance dependence in more liberalized provinces gained more. nonSOEs in less liberalized provinces gained less, especially if their past entertainment and travel costs (ETC) were higher. These results suggest market development and anticorruption reforms are mutually reinforcing. Taking nonSOEs' ETC as (at least partly) investment in connections, severed connections matter less and cutting corruption boosts more competitive firms' prospects more where market institutions are more developed. SOEs' uniform gains suggest that their ETC mainly funded private benefits, not connections.

Chen Lin
Faculty of Business and Economics
The University of Hong Kong
Hong Kong
chenlin1@hku.hk

Randall Morck
Faculty of Business
University of Alberta
Edmonton, AB T6G 2R6
CANADA
and NBER
randall.morck@ualberta.ca

Bernard Yeung
National University of Singapore
Mochtar Riady Building
15 Kent Ridge Drive
BIZ 1, Level 6, #6-19
Singapore 119245
bizdean@nus.edu.sg

Xiaofeng Zhao
Chinese University of Hong Kong
xiaofeng@baf.cuhk.edu.hk

1. Introduction

China, like many other middle-income countries, has problems with corruption. Corruption slows economic growth by diverting capital, effort, and talent away from productivity-boosting investment and towards political rent-seeking (Krueger, 1974; Murphy et al., 1991, 1993; Shleifer and Vishny, 1993; Mauro, 1995; Fisman and Svensson, 2007; Ayyagari et al., 2014). This literature suggests that reducing corruption, by improving allocative efficiency, could boost firm valuations – at least on average.

However, in an economy plagued by bureaucratic hold-up problems, ubiquitous political rent-seeking can emerge as a second-best suboptimum: an investment in official "connections" to "grease the gears" of the bureaucracy and "get things done" (Fisman, 2001; Wei, 2001; McMillan and Woodruff, 2002; Li et al., 2008, and Calomiris et al., 2010; Agarwal et al., 2015; Zeume, 2016). The political rent connected firms earn is being able to "get things done" that unconnected firms cannot. This literature suggests that reducing corruption, by reducing the effectiveness of such connections, could seize up bureaucratic gears and reduce firm valuations – at least for highly connection-dependent firms, and at least for a time.

Reducing corruption is a public policy priority for many countries (World Bank, 2015) because this second best entails severely suboptimal resource allocation. Corporate insiders can build connections to reap private benefits – such as perks or career opportunities – rather than to get things done for their firms. They can hone skills useful for building connections, not for managing firms efficiently (Morck et al., 2001); as officials hone skills for using their positions to create opportunities for favor trading. The effort and resources firms, their top executives, and officials all expend on rent-seeking are not spent on productivity enhancement. These arguments combine to imply that widespread political rent-seeking has large negative externalities (Murphy

et al., 1991, 1993). Overall, prior work argues that reducing corruption can clear the way for faster economic growth, but can have the opposite effect under some circumstances.

Recent events in China help identify those circumstances. In 2012, the Hu Jintao and Wen Jiabao administration's preset term ended, and the Xi Jinping administration took office. The formal transfer of power took place in the 18th National Congress (November 8th to 14th, 2012), amid a continuing power struggle. With this backdrop, on December 4th 2012, only three weeks after taking office, Xi Jinping's Politburo announced a new "Eight-point Policy", a Communist Party policy directive ordering cadres to forego conspicuous perks and other obtrusive behavior. Because state-owned enterprises (SOEs) are run by party cadres, the policy curtails SOE spending of this sort. Because government officials are also cadres, the policy curtails officials accepting such spending by others. The timing of this policy change was unusual, and was widely perceived as launching a major anti-corruption reform.

Consistent with the literature viewing corruption as value-destroying at the economy-level, a market portfolio of all firms listed on China's two mainland exchanges, the Shanghai and Shenzhen Stock Exchanges, has positive significant cumulative returns of +2.6% or +3.3% over 3-day or 5-day windows, respectively, centered on Dec. 4th 2012. These represent economically significant additions of ¥600 billion or ¥760 billion, respectively, to total market capitalization.

Disaggregating this finding provides new insights into how the different strands of the literature introduced above interact. This is because different provinces have implemented market reforms to very different extents (Fan et al., 2011)[1] and different firms might rely to very different extents on corruption to advance their business prospects, and might be in very different

[1] We use the term *province* in referring to all province-level governments. These include 23 provinces, 4 province-level cities (Beijing, Chongqing, Shanghai and Tianjin) and 5 autonomous regions (Inner Mongolia, Guangxi, Ningxia, Tibet and Xinjiang).

states of readiness to prosper in a less connections-dependent business environment. The main patterns we find across provinces and firms in stocks' reactions to the prospect of reduced corruption, and their possible implications, are as follows:

First, China's National Economic Research Institute (NERI) measures province-level jurisdictions' progress in implementing market reforms with a *Marketization* Index. Consistent with valuation gains predominating in provinces whose market machinery is largely up and running, the portfolio of firms located in high-*Marketization* (top tercile) provinces gains significantly – 4.1% and 4.8% in three and five-day windows, respectively, around the announcement date. In contrast, consistent with limiting corruption making "getting anything done" harder in less reformed provinces, firms in low-*Marketization* (bottom tercile) provinces post insignificant gains in both windows. These results suggest that reducing corruption might be more value-creating where market institutions are already better developed.

Second, stat8e-owned enterprises (SOEs) gain more than nonSOEs in both event windows. This suggests that nonSOEs might have depended more on connections to "get things done" than did SOEs. This is plausible because listed SOEs are innately politically well-connected.[2] Most are under direct state control through a state-owned holding company, often the State-owned Assets Supervision and Administration Commission (SASAC). SOE top managers are career government officials and Party cadres, whose promotion prospects of promotion to higher Party and civil service positions, like those of other officials, depend mainly on successfully implementing Party policy (Wu et al., 2014; Deng et al., 2105).[3] These

[2] SOEs have access to both SOE bank loans (Cull and Xu, 2003, Allen et al., 2005) and government concessions (Xu, 2011) that nonSOEs generally lack.

[3] Top SOE executives typically have high civil service grades. For example, a top centrally-controlled SOE might have a vice-ministerial grade, below a cabinet minister but above a typical mayor.

considerations all point to SOEs being more able than nonSOEs to "get things done" without "greasing bureaucratic gears."

Third, listed firms must disclose their entertainment and travel costs (*ETC*). Cai et al. (2011) argue that *ETC* proxies for investment in connections; however Morck and Nakamura (1999) interpret the analogous item in Japanese income statements as insiders' private benefits. Allowing for either, we take a firm's *ETC* as an unknown mix of investment in shareholder value-increasing connections and spending on insiders' private benefits: perks, connections helpful to top insiders personally, and the like. NonSOEs gain less the higher their prior-year *ETC* in low *Marketization* provinces. In contrast, both SOEs and nonSOEs in higher *Marketization* provinces gain more the higher their prior-year *ETC* was. This difference is consistent with nonSOEs in less marketized provinces using *ETC* more predominantly to build firm value-augmenting connection with cadres in government; but SOEs' and nonSOEs' ETC being more predominantly spending on private benefits for top insiders in high *Marketization* provinces. The Eight-point Policy, curtailing both sorts of *ETC*, moved the stocks of high-*ETC* nonSOEs in low *Marketization* provinces and SOE and nonSOEs in high *Marketization* provinces in opposite directions.

Fourth, firm-level regressions exploring the interactions of province *Marketization* with firm- and industry-level measures of competitiveness – total factor productivity (*TFP*) and growth opportunities (Q) – reveal a pattern of generally significantly higher gains for more competitive firms and sectors in more marketized provinces. This is consistent with reduced corruption disproportionately benefiting more competitive firms where market machinery is more fully up and running.

Fifth, firm-level regressions exploring the interaction of province *Marketization* with a

measure of external financing-dependence reveal higher gains for more external-finance dependent nonSOEs in more marketized provinces. This is consistent with investors expecting reduced corruption to improve nonSOEs' access to external capital. The absence of such an effect for SOEs is likewise consistent with their having had ready access to capital from SOE banks.

Obviously, investors can be wrong, and subsequent events may cast doubt on the Xi administration's resolve and objectives. However, this does not invalidate the analysis. Investors' expectations, even if ultimately unfulfilled, provide useful feedback about the likely implications of public policy alternatives.

Moreover, additional tests using accounting-based measures of firm performance suggest real effects paralleling these stock price reactions. Specifically, firms in more marketized provinces show larger increases in valuation, return on assets, and sales growth from the year before to the year after the enactment of the policy. These increases are larger for firms with higher prior total factor productivity, external finance dependence, and Q. Importantly, nonSOEs show decreased firm valuations, returns on assets, and sales growth across the same intervals if they have larger prior *ETC*, but this is mitigated if they are located in provinces with more complete market reforms.

Overall, these results are consistent with investors expecting reduced corruption to boost the prospects of firms that can depend less on corruption to "get things done". This includes SOEs in general and firms in more marketized provinces. The results are also consistent with reduced corruption disproportionately benefiting more competitive firms and more external finance-dependent nonSOEs in provinces with more developed market machinery. In other words, the value to public shareholders of improved resource allocation from reduced corruption

correlates with the extent of prior pro-market reforms.

These findings survive a battery of robustness checks. Additional tests explore alternative explanations of these findings, and all weigh towards the interpretation above. Of course, a province's progress on market reforms might correlate with other characteristics (culture, history, education, foreign influences, government quality and the like) that help shape its resource allocation efficiency. If so, a friendly amendment to our conclusions might be that reducing corruption, by limiting connections-driven state intervention, improves resource allocation more where either market machinery or these capabilities (or perhaps both) is better developed.

Our paper is organized as follows. Section 2 introduces the background and the Eight-point Policy. Section 3 describes our methodology and data. Section 4 presents the empirical results and Section 5 concludes.

2. Background and Event Description

2.1 Corruption in China

Dense networks of interpersonal obligations or *guanxi* (关系, lit. "connections") are a historically and culturally deep-rooted part of business in China (Gold and Guthrie, 2002). The term does not connote venality; developing connections is a normal and respectable part of doing business, indeed of life – and not just in China but in many parts of Asia and the world. However, *guanxi* can become excessive and turns into socially corrosive corruption, which is an increasing concern in China in recent years (Wedeman, 2012).

Official corruption is of special importance in China because its Market Socialism system relies critically on virtuous government officials. The constitution of the People's Republic of

China enshrines the Leading Role of the Communist Party of China. This gives Party policies constitutional precedence over all laws and regulations and empowers Party officials to intervene in judicial and regulatory decisions (Chen, 2003; Jones, 2003). The vast discretionary powers officials wield can easily make establishing ties of *guanxi* with them a very high return investment to any nonSOE business enterprises (McGregor, 2010).

In this environment, the innocuous building of human connections becomes an avenue for political rent-seeking, which Krueger (1974) models as firms investing in influencing government officials with the expectation of profiting from regulatory favors, tax breaks, subsidies, and the like. When political rent-seeking becomes more profitable than investing in boosting productivity, economy-level growth lags even as corporate profits soar (Murphy et al., 1991, 1993; Shleifer and Vishny, 1993; Mauro, 1995; Svensson, 2005; Prichett and Summers, 2013). Equilibria in which political rent-seeking crowds out investment in productivity plausibly explain the middle-income traps in which many partially developed economies stagnate for decades (Morck et al., 2005). The avoidance of this trap is an increasingly salient policy concern in China (Woo, 2012).

Chinese political rent-seeking uses *guanxi* to implant a sense of obligation by providing a government official with extravagantly expensive wining and dining, entertainment, travel, gifts, or other *de facto* bribes. Business leaders seeking official permissions, regulatory forbearances, or influence over other government decisions therefore invest in lavishly "entertaining" pivotal government and Party officials to build connections – in effect, cronyism. These practices threaten the legitimacy of the Communist Party of China (CPC) because the lifestyles such officials consequently enjoy jar with socialist egalitarianism and because the resultant resource misallocation threatens the rapid growth that sustains the Party's popularity.

Widespread corruption can form a stable suboptimal political-economy equilibrium. If favor-trading between politicians and firms has been extensive,[4] officials do not support anti-corruption reforms. Officials owing favors would not betray those to whom they are indebted. Favor-owing officials would fear their past actions becoming legally or ethically inappropriate, leaving them vulnerable to whistle-blowing and punishment. This builds in inertia: powerful officials find anti-corruption reforms against their personal interests, even if they recognize the public good in such reforms. A political shock to destabilize this equilibrium then becomes a necessary precursor to effective reforms.

2.2 Political background developments in 2012

The Hu Jintao-Wen Jaibao administration's predetermined term ended in 2012, and the new administration of Xi Jinping assumed office amid an ongoing struggle between multiple Party factions for political power and economic gain. This struggle appeared increasingly fierce throughout that year. One faction was allegedly led by Zhou Yongkong, then in the Standing Committee, the highest and most powerful CPC committee, thought he might have had backing from other established and powerful political grandees. Bo Xilai, a politically ambitious princeling (son of a Mao-era Revolutionary leader), like Xi Jinping, despite being backed by Zhou Yongkong, was dismissed as Chongqing's Party Secretary on March 15th, suspended from the CPC's Central Committee and its Politburo a month later, and expelled from the Party on Sept 28th 2012. The Washington Post wrote that Xi Jinping "disappeared mysteriously for two weeks. He went unseen, unheard, and undiscussed by official Chinese media," purportedly after

[4] Transparency International ranked China as a "highly corrupt country" in 2012.

being “hit in the back with a chair hurled during a contentious meeting of the ‘red second generation’."[5] Regardless of the veracity of this particular report (the Post’s writer expressed doubts), the period leading up to the succession was one of escalating tension.

The Party’s 18th National Congress, on Nov 8th to 14th 2012, marked the official transfer of power. On Nov 14th, Xi assumed the title General Secretary of the Communist Party and Chairman of the Party Central Military Commission.[6] However, signs of a continuing power struggle continued. At the beginning of the National Congress, “former President Jiang Zemin and other party veterans returned to centre stage … demonstrating their continued power to shape the country's future” (South China Morning Post, Nov 8th 2012). By its end, Nov 14th, Hu Jintao, the departing President of China and General Secretary of the Party, unexpectedly relinquished all his titles and positions (Telegraph, Nov 14th 2012). This unprecedented act was thought to be setting an example for other departed and departing leaders. On Nov 17th, 2012, Hu and Xi jointly urged “the Chinese army to be absolutely loyal and to accomplish historic missions” (Xinhua News, Nov 17th 2012). In his final speech to the 18th National Congress, Hu Jintao spoke of his administration’s achievement in building a moderately prosperous society with deepening reforms that maintained socialism with Chinese Characteristics. On Nov 19th, in a meeting with the Politburo, Xi made a speech themed "firmly uphold and develop Socialism with Chinese Characteristics” and urged the Politburo to “promote and implement the spirit of the 18th CPC National Congress," (Xinhua News, Nov 20th 2012). Political tension was still clearly on display, and no clear policy direction was yet evident.

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[5] See “The secret story behind Xi Jinping’s disappearance” by Max Fisher, Washington Post Nov. 1st 2012. https://www.washingtonpost.com/news/worldviews/wp/2012/11/01/the-secret-story-behind-xi-jinpings-disappearance-finally-revealed/

[6] Xi assumed the title of President later, in March of 2013.

The first hint of developing policies may have been a report submitted to the 18th National Congress by the *Central Commission for Discipline Inspection* (CCDI), the Party's top anti-graft body, arguing that the Party must fight corruption and treat this as a major political task, first reported by Xinhua News on Nov 20th 2012. However, in China (and elsewhere), attacks on corruption after an important political transition are often mere rhetoric, or even smokescreens for purging political opponents.

2.3 The Eight-point Policy, Dec 4 2012, the first shot in the Anti-corruption Drive

The CCDI might well have been right: corruption had become a genuinely serious public concern. Figure 1 summarizes a 2013 PEW Research Center National Survey of Chinese respondents' top concerns: Corrupt officials come in second, behind only inflation, and are ahead of inequality, pollution, food safety, and old age security. Second, all mainland Chinese school children learn how corruption weakened Chiang Kai-shek's Kuomintang regime and created popular support for Mao's Communist Party. Third, China's increasingly well-educated and cosmopolitan population appears to accept limitations on individual freedoms in return for rapid growth. If corruption threatens to slow that growth, the Party risks being perceived as failing to uphold its half of the bargain. Thus, a CCDI official warned that "*the public's trust in the Party and the government has fallen to a critical level*". (Xinhua News, Nov 20th 2012)

Xi made cutting corruption his signature policy. Wang Qishan, Xi's friend since youth when both did manual labor in Shaanxi during the Cultural Revolution, played a central role in the campaign. Wang, a member of the CPC Standing Committee, was appointed CCDI Secretary.

Xi fired the first shot in the anti-corruption campaign on Dec 4th 2012. This was a policy

document by the *Politburo of the Central Committee of the CPC* entitled the Eight-point Policy (八项规定). Each of its points is an explicit instruction about how leading cadres are to behave going forward. The eight points are:[7]

1. Leaders must keep in close contact with the grassroots, but without inspection tours or formality.
2. Meetings and major events are to be strictly regulated and efficiently arranged; empty grand gestures are to be avoided.
3. The issuance of official documents must be reduced
4. Overseas official visits and related formalities are to be restricted
5. Leaders traveling by car must avoid disrupting traffic
6. Media stories about official events are to be limited to events with real news value.
7. Government leaders should not publish self-authored works or congratulatory letters.
8. Leaders must practice thrift and strictly obey regulations regarding accommodation and cars.

Given the background, skeptics saw the Eight-point Policy as cover for an internal power struggle (Broadhurst and Wang, 2014) or simply an attempt to make cadres' behavior less invidious; others saw a genuine anti-corruption campaign unfolding (Yuen, 2014).

The Eight-point Policy announcement was surprising in several ways. First, the announcement came only 19 days into the administration of President Xi Jinping. This timing was unusual because it preceded the Third Plenum, the traditional forum for announcing a new Politburo's policy directions, by roughly a year. Second, the statement was unusually concretely

[7] For details, see http://cpcchina.chinadaily.com.cn/2012-12/05/content_15991171.htm.

detailed and free of slogans. While it does contain some expected refrains, the document mainly specifies detailed rules. Moreover, almost immediately after the initial announcement, official clarifications made the anti-corruption objective clear and that Eight-point reform was the first official policy of this sustained agenda. Individual provinces quickly rolled out more detailed rules. For example, Tibet Autonomous Region released its own Ten Rules on December 5th 2012, itemizing how officials should reduce waste and extravagance and simplify official functions. Professor Wang Yukai, a prominent member of the State Council directed Chinese Academy of Governance, explained on Dec 7th 2012 that, "The Politburo took the lead to change work style, it will play a critical role in fighting corruption at the root."[8] Third, the announcement came amid official warnings of unusual clarity. Premier Li Keqiang promised "zero tolerance to corrupt officials" and "to seriously punish any breach of the Eight-Point anti-bureaucracy and extravagance-busting guidelines as announced by the central authorities." That is, the Eight-Point Policy's purpose was explicitly spelled out: it signaled a general condemnation of government officials trading favors.

The Eight-point Policy was the only major national news story on or around Dec 4th 2012. To verify this, we use the news function in the WIND Information Database to search through a comprehensive collection of news from different sources, such as major financial media in China, the CSRC, People's Bank of China, Ministry of Finance, and other government organizations, and in different areas, such as finance, business, government policy, law and regulations. We augment this by searching major news media and internet records. These exercises reveal no other major policy announcements, and confirm that the Eight Point Policy was the only major

[8] See "Wang Yukai: Central Government Leads Drive to Root Out Corruption" *Communist Party of China News Web*, Dec. 7th 2012 (http://theory.people.com.cn/n/2012/1207/c40531-19818605.html).

news event in the window period.

The policy gained immediate and widespread attention. Figure 2a graphs internet searches using Baidu, the Chinese analog of Google using the terms "Eight-Point Policy" (八项规定) and "anti-corruption" (反腐). Each search volume is normalized by its own maximum in the window. The figure shows both search volumes rising sharply on Tuesday, December 4th, the event date, with "Eight-point Policy" searches peaking two days later (Thursday December 6th) and "anti-corruption searches" peaking three days later (Friday December 7th).

The figure shows a much smaller increase in searches for "anti-corruption" prior to the event date. This corresponds with a Nov 20th 2012 Xinhua (official news agency) report on a CCDI submission to the 18th National Congress about the need to eliminate corruption, mentioning that one of Xi's close allies now headed the CCDI. The increase in searches for "anti-corruption" is relatively very small, as Figure 2B shows by scaling both search volumes with the same denominator, the maximum number of searches for "Eight-point Policy". Search volumes for terms relating to possible confounding news – 'Economic Development' (经济发展), 'Economic Growth' (经济增长), and 'Economic Reform' (经济改革), graphed in Figure 2C, affirm the absence of other news related economic policy changes in or near the event windows. These graphs show that the Eight Point Policy was the major standout event in this period. We return to these issues in section 4, which presents additional robustness checks.

The Party's subsequent actions also suggest that the policy had teeth. Xi Jinping remarked at a plenary meeting of CCDI in Jan 2013 (Xinhua, Jan 22 2013) that the administration should crack down on 'tigers' and 'flies' in rooting out corrupt politicians, eliminating illegal activities, and curbing gift giving and conspicuous consumption to change the

general behavior of officials and renew the Party. The CCDI subsequently launched a website on which whistleblowers could report cadres' violations of the policy. In 2013, the CCDI reported disciplining 182,000 officials for corruption or abuse of power and 30,420 cadres specifically for violating the Eight-point Policy. Of the latter, 227 were province-level or higher. Other statistics reinforce the veracity of the Party's commitment. Sales of cigarettes, alcohol, shark fins, edible swallows, Gucci bags and Ferraris all dropped abruptly in 2013. By 2014, a series of heavyweight cadres stood convicted of corruption. These included former Politburo member Zhou Yongkang, former Central Military Commission Vice-Chairman General Xu Caihou, People's Liberation Army General and Logistics Department Deputy Leader Gu Junshan, and even retired President Hu Jintao's Personal Secretary, Ling Jihua.

In these years, the information environment in China's stock markets had improved substantially relative to the 1990s. Using 1995 to 2012 data, Carpenter et al. (2014) report that "since the reforms of the last decade, China's stock market has become as informative about future corporate profits as in the US." Our observation window also precedes China's high market-volatility episodes of 2015 and 2016. This period of relative market calm is thus favorable to searching for information-driven share price movements in China's markets.

The above discussion validates the feasibility of an event study of the Dec 4th 2012 announcement. The event date corresponds to no other confounding major news release of potentially economically important. Stock returns around the event therefore plausibly reflect investors' initial expectations as to whether the policy announcement signaled a new administration firmly in charge and launching a substantive reform (with differential impact across the economy) or merely an abruptly fiercer inter-factional power struggle within the Party.

3. Methodology and Data

3.1 Modified Event Study Methodology

Traditional event studies look for common patterns in the reactions of many stocks, each to its own news event on its own event date. Cross-sectional analysis uses abnormal returns, removing the influence of news with market-wide implications, because the focus is on identifying common patterns in the reactions of the individual stocks on firm-specific event dates – CEO sudden deaths, merger bids, equity issue announcements, or other such news.

The current exercise is somewhat different. The Eight-point Policy was designed to affect the entire economy, not specific firms, and to affect all firms at once. This motivates our first examining the market portfolio's raw return on and around the event date, instead of subtracting it to form abnormal returns.

Second, we expect different sorts of firms in different parts of the country to be differently affected by the Eight-point Policy. We investigate this by comparing the returns of portfolios of firms based in different provinces or with different characteristics. These exercises use the tests Schwert (1981) recommends for event studies of regulatory changes.

Finally, we explore heterogeneity in the reactions of different sorts of firms to the announcement by running regressions explaining either firm-level cumulative raw returns or firm-level cumulative abnormal returns. These regressions assume a meaningful degree of independence in the idiosyncratic components of individual firms' reactions to the Eight-point Policy. To mitigate overstating statistical significance, we cluster standard errors both by industry and by province.

3.2 Sample, Firm Type, Spending on Investment, and Market Development

3.2.1 Sample

Our sample is all firms listed on China's two stock exchanges – the Shanghai Stock Exchange and the Shenzhen Stock Exchange. Stock returns and financial data are from the CSMAR database. We drop all firms with material corporate events, such as stock or cash dividends, stock splits or reverse-splits, new share issuances, or M&A announcements, in the five-day event window surrounding the Dec. 4th 2012 event date.

In looking at how different stocks might react differently to the Eight Point Policy announcement, we consider firm types – SOEs versus nonSOEs, their likely past investment in official connections, and the institutional environment in which they reside.

3.2.2 Firm Type: SOEs and nonSOEs

China has two broadly defined classes of listed firms, state-owned enterprises (SOEs) and non-state-owned firms (nonSOEs). SOE top managers are career-minded bureaucrats, usually assigned to an SOE for only a few years before being moved on. Like other officials, they have formal and often high ranks as both Party cadres and civil servants, their promotion prospects depending on faithfully implementing Party directives (Wu et al., 2014; Deng et al., 2015). These shared career concerns have several implications: SOE top managers may build connections to advance their careers more than their current SOEs' prospects. SOEs may depend less on corruption to "get things done" if the officials who regulate them are similarly incentivized to obey the Party hierarchy. SOE managers may be former officials and officials may be former SOE managers, making SOEs integral components of the civil service. Thus,

SOEs appear to enjoy favorable official treatment. For example, SOEs have preferential access to bank loans, the dominant form of financing in China (Cull and Xu, 2003; Allen et al., 2005). SOEs often have state-enforced monopoles in key sectors including natural resources, civil aviation, communications, and finance (Chen et al., 2011) or other government concessions (Xu, 2011).

NonSOE top executives, in contrast to those of SOEs, often have substantial equity ownership stakes, and their careers are more tied to their firms' prospects (Conyon and Lerong, 2011). NonSOEs are not intrinsically connected to the civil service, and have less access to state-owned bank loans, capital markets (e.g. IPO) (Cull and Xu, 2003; Allen et al., 2005; Firth et al., 2008; Piotroski and Zhang, 2014) and official licenses to enter new lines of business. Also, Park and Luo (2001) note, "It is not surprising to find that private firms were often left out of business opportunities due to a lack of materials even if their products were popular in the market." Thus, nonSOEs must contend with more severe bureaucratic obstacles than SOEs confront.

These differences suggest that genuinely reducing corruption would affect SOEs and nonSOEs differently. If genuine anti-corruption reforms mitigated officials' discretionary powers, more competitive firms would obtain more financing and business opportunities; and this could encourage nonSOEs more than SOEs. In contrast, if it leads to bureaucratic paralysis and increasing the cost of doing business, nonSOEs could be worse affected than SOEs.

State control over listed firms is sometimes exercised through control chains of intermediate firms. To classify firms as SOEs or nonSOEs, we use the China Listed Firm's Shareholders Research Database (GTA_HLD), which provides details about the large shareholders of all firms listed in Shanghai and Shenzhen from 2003 on. This includes information about each firm's large direct shareholders, their ultimate controlling shareholders,

and the equity control chains that connect the latter to the firm. Following the CSMAR (China Stock Market and Accounting Research) and guidelines from the CSRC (China Securities Regulatory Commission) issued on Dec 16 1997, we adopt a 30% threshold to trace control chains. We make an indicator variable that flags state-owned enterprises (SOEs), by which we mean firms controlled by the state or state organs at or above the 30% threshold, either directly or indirectly via equity control chains whose weakest link is 30% or higher. We designate all other firms as nonSOEs. In most cases, the state organ is a State-owned Assets Supervision and Administration Commissions (SASACs), the Ministry of Finance and its provincial branches, or an analogous body.

Our approach likely understates state control, as many nonSOEs are indirectly state-controlled through ostensibly nonSOE holding companies run by government officials. Moreover, all firms of any note have Party Committees and Party Secretaries to assist their boards and CEOs. Nonetheless, the SOE designation plausibly reflects both a more direct state role in governance and preferential treatment by governments and the major banks, all of which are SOEs.

3.2.3 Investment in Connection

Prior work suggests that reducing corruption diminishes the value of a firm's political connections (Fisman (2001)). Different firms may have invested different amounts in connections. A binding anti-corruption reform that reduces the importance of such connections might adversely affect firms with substantial such investments, even as it lifts the burden of corruption from the economy as a whole. Cai *et al.* (2011) show that firm-level "entertainment & travel costs" from the WIND database proxy for firms' investment in connections. However,

ETC also includes executives spending on their own entertainment and travel; and Morck and Nakamura (1999) interpret the analogous item in Japanese firms' income statements as measuring insiders' private benefits. We therefore allow that *ETC* might reflect either investment in connections or private benefits.

This dual interpretation is unavoidable in relating *ETC* to the Eight-Point Policy. NonSOE executives lavishly entertaining officials are not violating the Eight-point Policy; but government officials so entertained are violating it. SOE executives, as government officials, are violating the Eight-point Policy if they spend their firms' money lavishly entertaining other government officials, themselves, their families, or anyone else. Moreover, because SOE top executives are career-minded cadres aspiring for promotion within the civil service. Thus, SOE *ETC* might be directed at advancing the career prospects of SOE top executives rather than the prospects of the SOE. From public shareholders' perspective, such *ETC* – which might include wining and dining superiors or potential superiors – is essentially an insider perk akin to SOE executives spending on lavish living or other private benefits. We speculate that the insider private benefits component of *ETC* is likely higher in SOEs than in nonSOEs. If the Eight-point Policy mitigates private benefits, SOE shareholders would then gain more than nonSOE shareholders.

3.2.4 Development of Market Institutions

Market reforms have progressed to very different stages in different provinces. Where market institutions are better developed, reducing corruption plausibly improves resource allocation efficiency more. Where market institutions are less developed, official connections might be essential to "grease" bureaucratic gears, and reducing corruption might have ambiguous

implications. Indeed, if cutting corruption leads utility-maximizing officials to pursue a "quiet life", bureaucratic gears could slow, raising the cost of doing business where market reforms are limited. We therefore note the province in which each firm is located, and the extent of market reforms there.

To measure the stage of market reforms, we use the province-level *Marketization* Index produced by the National Economic Research Institute (NERI) (Fan *et al.,* 2011). The *Marketization* Index, based on official statistics and enterprise and household surveys, ranges from zero to ten in the base year 2001, with higher scores indicating more progress towards a market economy, and can exceed ten or fall below zero in subsequent years to reflect a province's progress or retrogression over time. This index is widely regarded as meaningfully measuring the progress of pro-market reforms (Wang et al., 2008; Fan et al., 2011).

We also make use of NERI subindexes, based on subsets of the data used in generating the overall *Marketization* index. One type of subindex focuses on progress towards market-based resource allocation. The Resource Allocation Subindex measures the extent to which the market, rather than government, allocates resource using the government's budget as a fraction of GDP. The index is coded as such that a higher value indicates a larger role for market forces. Another such subindex, the *Financial Sector Marketization* Subindex, gauges nonSOEs' access to capital based on deposits in nonSOE financial institutions and all (mostly SOE) banks' lending to nonSOEs. Qualitatively different from these, the *Legal Environment* Subindex uses enterprise survey data to assess the legal environment each province provides for businesses. The variable reflects company leaders' opinions about factors such as provincial courts' efficiency in resolving legal disputes. Fisman and Miguel (2007) show the legal environment to be an important determinant of corruption.

Table I reports the *Marketization* Index and these subindexes in 2011 for each province in 2011. The five most "marketized" provinces are Zhejiang, Jiangsu, Shanghai, Guangdong, and Beijing; the least are Tibet, Qinghai, Gansu, Xinjiang and Guizhou.

4. Empirical Findings

4.1. The Reaction of the Market

Table II summarizes movement in the market in two windows: a three-day window [-1, +1] from the trading day before the Dec. 4th 2012 announcement date to the trading day after it and a five-day window [-2, +2] beginning two trading days before the announcement date and ending two trading days after it. The all-China market portfolio gains 2.6% in the three-day window and 3.3% in the five-day window, with both figures statistically significantly different from the baseline.[9] Also, both are economically significant, representing 600 and 760 billion RMB increases, respectively. Table II also shows the fraction of firms gaining versus losing value in each window. Only 25.9% drop in the 3-day window and only 23.9% drop in the 5-day window. Table II is thus consistent with investors viewing the Eight-point Policy as important and, on net, positive economic news.

If reducing corruption leads to better resource allocation (Shleifer and Vishny, 1993; Mauro, 1995), firms in provinces with more developed market institutions would gain more if corruption is expected to abate. Table II examines the returns of portfolios of firms in provinces at different stages of development of market institutions. The three-day window cumulative

[9] In this, and the other portfolio significance tests to follow, the portfolio's mean event window return and historical standard deviation, the latter estimated using data from 210 to 11 trading days before the event date (-211 to -11), are used to assess statistical significance.

return on the portfolio of firms in the highest-tercile *Marketization* provinces is +4.1% and statistically significant, with only 22% of those firms declining. In the 5-day window, the same portfolio rises by a statistically significant 4.8%, with only 21% of its component stocks declining. In contrast, the cumulative three-day window return on the portfolio of firms in the lowest-tercile *Marketization* provinces is a statistically insignificant +0.9%, with 36% of its component stocks declining. In the five-day window, this portfolio registers an insignificant +1.6% rise, with 35% of its component stocks declining.

Repeating the above exercises using the median *Marketization* as a breakpoint, we obtain similar results. The portfolio of firms in above-median *Marketization* provinces rises in value; its counterpart in below-median *Marketization* provinces does not. The difference between them is smaller than that between the top and bottom terciles.

These results are consistent with investors expecting firms located in provinces where market institutions are more developed to gain from reduced corruption, but expecting negligible net gains for firms in provinces where market institutions are less developed. Of course, other interpretations are possible, and we return to this issue below.

4.2 Province-Level Portfolio Cumulative Returns

A multivariate regression analysis explores the relationship between stock price reactions and province characteristics in greater details. We construct portfolios of firms domiciled in each province and regress these portfolios' event window cumulative returns on province characteristics including GDP Growth, Education Expenditure/GDP, *Marketization* and Log (GDP per capita). GDP growth proxies for growth trajectory; Education expenditure/GDP

captures human capital stock; and *Marketization* and Log (GDP per capita) capture the development of market institutions and the level of economic development. Appendix Table I reports summary statistics for those province-level variables. Figure 3 tabulates the three-day cumulative returns of each province portfolio. These range from 0.85% for Ningxia to 2.95% for Tianjin.

Table III reports the regression results. In Col. 1, where the explained variable is the three-day cumulative returns, GDP Growth and Education Expenditure/GDP attract positive coefficients significant at 5%. The coefficient on *Marketization* is 0.193, and significant at 1%. Column 2 replaces the overall *Marketization* Index with three sub-indices, Resource Allocation, *Financial Sector Marketization*, and *Legal Environment*. The coefficients on all three subindexes are positive and statistically significant.

The coefficients are also economically significant. GDP Growth, Education Expenditure/GDP, Resource Allocation, *Financial Sector Marketization* and *Legal Environment* all being one standard deviation above their means implies a 3-day cumulative return of about 2.5%. The all-China market return was 2.6% in the same window. Cols. 3 and 4 repeat these exercises using each province-level portfolio's five-day cumulative return as the explained variable. Virtually identical results ensue.

We also construct cumulative abnormal returns for each provincial portfolio. We first compute firm-level abnormal returns using the market model, with parameters estimated over the period from day -210 to -11 (day 0 is the event day) using the value-weighted mean return across all stocks as the market return. We then obtain a provincial portfolio's abnormal return by averaging its component firms' abnormal returns using firms' market values as weights. Table IV reports regressions of these provincial portfolios' cumulative abnormal returns on province

characteristics, as in Table III. The results are almost identical to those using raw cumulative returns: the coefficients on GDP Growth and Education/GDP are significantly positive in both event windows; the coefficients of *Marketization* and the three sub-indices are all positive and insignificant, save that the coefficient for *Financial Sector Marketization* becomes insignificant in the five-day window.

Overall, these findings are consistent with reductions in corruption being more advantageous to firms in provinces with faster GDP growth, larger stocks of human capital, and more developed market institutions. These characteristics plausibly identify provinces where firms can more readily take advantage of productivity-enhancing growth opportunities, once currying favor with officials is less necessary. In contrast, restricting corruption appears less helpful to firms located in provinces where market forces are weaker, leaving "connections" more essential for "greasing" bureaucratic gears to "get things done".

4.3 Market Development, State Control, and Prior Investment in Connections

To delve deeper, we form portfolios by partitioning firms along the three dimensions described in Section 3.2: as an SOE or nonSOE, located in a top or bottom tercile *Marketization* province, and having prior *ETC* in that variable's top or bottom tercile.

Table V shows the portfolio of all nonSOEs gaining insignificantly (+1.14% in the 3-day window; +2.23% in the 5-day window). However, the portfolio of nonSOEs in high *Marketization* provinces gains significantly (+1.83% in the 3-day window; +2.92% in the 5-day window), while its counterpart in low *Marketization* provinces hardly moves (-0.08% in the 3-day window; +1.35% in the 5-day window). Among the sub-portfolios of nonSOEs, that of

nonSOEs with low prior *ETC* in high *Marketization* provinces gains significantly: +1.83% in the 3-day window and +2.92% in the 5-day window. In contrast, the subportfolio with the most declines is nonSOEs with high past *ETC* in low *Marketization* provinces.

The portfolio of all SOEs gains +4.1% and +4.7% in the three- and five-day windows, respectively; with both gains highly significant. The portfolios of SOEs in low and high-*Marketization* provinces, the portfolios of SOEs with high and low prior *ETC*, and the subportfolios of SOEs in all combinations of high and low-*Marketization* provinces and high and low past *ETC* all gain more than their analogous nonSOE portfolios. Moreover, the rankings of the returns of the various SOE subportfolios echo those of the analogous nonSOEs subportfolios. That is, the portfolio of SOEs with low past *ETC* in high-*Marketization* provinces posts the greatest gain; that of high-*ETC* SOEs in low-*Marketization* provinces gains the least; and those of low-*ETC* SOEs in low-*Marketization* provinces and of high-*ETC* SOEs in high-*Marketization* provinces post intermediate gains.

Figure 4 plots the cumulative abnormal returns, beginning 20 days before the event date, of portfolios of firms partitioned along all three dimensions – SOEs versus nonSOEs, high versus low-*ETC*, and location in a high versus low *Marketization* province. The plots show these abnormal returns shifting abruptly after the regulation announcement. The abnormal returns of three of the four SOE portfolios become highly positive, the exception being SOEs having high prior *ETC* and located in low-*Marketization* provinces. The portfolio of SOEs with low past *ETC* and located in high-*Marketization* provinces has the highest abnormal return. In contrast, the four nonSOE portfolios abnormal returns diverge: both high-*Marketization* nonSOE portfolios gain; both low-*Marketization* nonSOEs portfolios decline. That is, the strength of the market institutions surrounding a nonSOE appears to affect its stock price reaction to the reform more

than does its past *ETC*.

The Eight-point Policy lifting nonSOE shares the most if the nonSEO has low past *ETC* and is located in a high-*Marketization* province is consistent with "greasing bureaucratic gears" being least profitable for such firms, leaving reduced corruption an unmitigated plus. That the reform fails to lift the shares of any portfolio of nonSOE is consistent with "greasing bureaucratic gears" being more valuable to those firms, except in high-*Marketization* provinces. That the reform lifts SOE shares across the board is consistent with shareholders viewing their *ETC* as predominantly value-decreasing – that is, as spending on private benefits rather than valuable connection-building. Finally, the finding that the rankings of the SOE subportfolios nonetheless track the rankings of the analogous nonSOE subportfolios is consistent with SOE *ETC* still having a detectable connections-building component.

4.4 Firm-level Regressions

The findings above reveal SOE and nonSOE stock price reactions varying with at least two variables, *ETC* and *Marketization*. To explore their interaction in more detail, and to allow other variables to enter, we turn to firm-level multivariate regressions.

The regressions explore allocative efficiency by explaining stock price reactions to the policy announcement with additional variables that proxy for a firm's competitiveness and external financing needs. We might expect proxies for competitiveness to correlate more positively with stock price reactions for firms based in provinces with more marketized institutions. The regressions further explore the *Marketization* findings by using its more nuanced subindexes to track specific kinds of market reforms and their interactions with *ETC*.

The specific province-level business environment variables used include: provincial *GDP Growth*, Log(*GDP per capita*), *Education Spending* as a fraction of GDP, and the *Marketization* index or subindexes. The firm characteristics include: *Firm Size*, taken as the log of total assets; *Leverage* (liabilities/total assets), and *Research and Development Spending* (R&D/ sales). These regressions also include industry fixed-effects to remove common reactions across industries and always cluster residuals both by industry and by province. All variables are 2011 data. Appendix II reports their means and standard deviations in the full sample and in sub-samples of SOEs and nonSOEs.

Given the very different patterns of results for portfolios of SOEs and nonSOEs revealed in Table V, we run separate regressions for the two categories of firms. Table VI reports the results, with the regressions in Panel A and B, respectively, explaining the 3-day and 5-day firm-level raw returns. Table VII repeats this exercise with cumulative abnormal returns on the left-hand side. The two tables, and the two panels within each, are very similar, so we focus on Panel A of Table VI.

4.4.1 Development of Market Institutions, Firm Characteristics and Stock Price Reactions

Columns 1 and 4 of Panel A in Table VI affirm that the development of market institutions in a firm's home province correlates positively with its stock's price reaction to the Eight-point Policy for both SOEs and nonSOEs. In contrast, the other provincial business environment factors – *Education Spending/GDP* and *GDP Growth* – matter only for nonSOEs. The coefficient on *Marketization* is also larger for nonSOEs. Pooling the data and running a regression containing an SOE dummy and interactions reveals the differences in magnitude to be statistically significant. Thus, investors expect reducing corruption to boost nonSOEs' valuations

more where market institutions are more developed. In other words, corruption hurts nonSOEs more where market forces might have better guided corporate decision-making.

To explore this further, we introduce as additional explanatory variables interactions of province-level *Marketization* with measures of firms' market readiness. To proxy for general competitiveness, we use firm-level *Total Factor Productivity* (*TFP*) estimated as in Levinsohn and Petrin (2003) and *Growth Potential* (Q), defined as industry-median Tobin's q (market-to-book ratio). To proxy for capital market proclivity, we use industry median *External Finance Dependence* (*EFD*) defined as capital expenditures minus cash flow from operations over capital expenditures (Rajan and Zingales, 1998). The regressions include *TFP* main effects; those of *EFD* and *Growth Potential* are subsumed by industry fixed-effects.

Using the nonSOE subsample, regression 2 reveals significant positive coefficients on the interactions of *Marketization* with *TFP*, *EFD* and *Growth Potential*, with the main effect for *Marketization* becoming insignificant. Regression 5 presents the analogous regression using the SOE subsample, in which the interactions of *Marketization* with *TFP* and external financing are all insignificant, the interaction with Growth Potential is positive and significant, with the main-effect for *Marketization* again becoming insignificant.

These results indicate that investors expected reduced corruption to better help more productive nonSOEs that have more growth potential and need external finance if they are located in provinces with more developed market institutions. Likewise, investors expect curtailing corruption to better help SOEs with more growth potential if they are located in provinces with stronger market institutions. These results are consistent with SOEs, unlike nonSOEs, having ready access to financing without having to invest *ETC* to build connections.

4.4.2 Market machinery vs Legal Environment

Additional tests dig deeper by using *Marketization* sub-indexes that gauge the development of different sorts of market institutions. Two subindexes gauge the importance of market machinery in allocating resources: *Financial Sector Marketization*, which gauges nonSOE access to capital, and *resource allocation*, which measures the non-government share of the economy. Higher values of these subindexes indicate a province in which more resource allocation is likely determined by non-state actors. Another subindex, *Legal Environment*, based on surveys, summarizes business executives' opinions about the efficiency of courts in the province. The market machinery measures thus gauge resource allocation (including capital allocation), while *Legal Environment* gauges how reliably contracts, rules, and regulations are enforced in the province.

We are interested in which facet of *Marketization* drives the results in columns 2 and 5. We replace the interactions of *Marketization* with firm characteristics with three blocks of cross-terms: firm characteristics interacted with *Resource Allocation*, with *Financial Sector Marketization*, and with *Legal Environment*. Columns 3 and 6 report the regression results for the nonSOE sample and the SOE sample, respectively.

The blocks of firm characteristics interacted with market machinery measures have a statistically significant joint F-statistic; while the block of firm characteristics interacted with *Legal Environment* does not. This finding is consistent with market machinery mattering more than the legal environment in explaining differences in the prospects of different firms after corruption decreases.

For nonSOEs, the interactions of *Financial Sector Marketization* with *TFP*, external finance dependence and growth potential attract positive and significant coefficients. So does the

interaction of *Resource Allocation* with growth potential. These results are consistent with investors expecting reduced corruption to better help nonSOEs that are more productive, have higher growth potential, and need external finance more if they are in provinces whose financial sectors are more market-driven and in which resources are allocated more by market forces. The *Legal Environment* subindex interacted with external finance dependence also attracts a positive significant coefficient, consistent with better enforcement of the anti-corruption policy making finance more available to unconnected nonSOEs, as in Allen et al. (2005) and Agarwal et al (2015).

For SOEs, only the interactions of growth potential with *Resource Allocation* and *Financial Sector Marketization* are positive and significant. Thus, curtailing corruption better helps SOEs with more growth potential in provinces where market forces are stronger and external capital is more readily accessible.

The flipside of these sets of results is that investors do not clearly expect reduced corruption to bring about more efficient resource allocation in less marketized provinces, that is, provinces whose market machinery is less developed.

4.4.3 ETC and Stock Price Reactions

The main effect estimates in Table VI Panel A link higher past *ETC* to lower event window returns for nonSOEs, but not for SOEs. This is consistent with nonSOEs' *ETC* being "grease for bureaucratic gears", but SOEs' *ETC* being private benefits.[10] This panel reveals markedly

[10] Table 5 shows portfolio gains negatively related to ETC for both SOEs and nonSOEs. The regressions preserve this negative relation for nonSOEs in less marketized provinces but indicate a positive correlation of returns with

different patterns for nonSOEs and SOEs.

In the nonSOE subsample, regression 2 assigns *ETC* a significantly negative coefficient of –8.18 and the interaction term *Marketization*ETC* a significantly positive coefficient of +1.258. This implies an inflection point at a *Marketization* index of 6.5 = 8.18/1.258, slightly above that of Hainan, whose *Marketization* index, at 6.4 (Column 1 in Table 1) puts it in 19th place among China's 31 province-level jurisdictions. That is, on average, nonSOE stock price reactions increase with prior *ETC* in provinces more marketized than Hainan, but decrease with prior *ETC* in provinces at or below Hainan's *Marketization* level. This is consistent with nonSOE shareholders viewing *ETC* as net-value-creating where *ETC*-funded official connections are most valuable, but as net-value-destroying in provinces where *ETC*-funded connections are less important, and *ETC* is more apt to be waste or spending on insiders' private benefits. Regression 3 reveals an analogous pattern: stock price reactions around the reform rise with *ETC* where market forces are stronger in the financial sector and in resource allocation, but fall where those sorts of market institutions are less developed.

For SOEs, the interaction of *Marketization* with *ETC* (Col. 5) is also positive and significant, but *ETC* itself is insignificant. A plausible interpretation is that *ETC* of SOEs domiciled in more marketized provinces might be more predominantly private benefits, with less value to shareholders in terms of "greased gears". This interpretation is reinforced by the positive and significant coefficient for the cross term between *ETC* and *Legal Environment* in Col. 6. These findings are consistent with better developed legal and market institutions limiting SOE insiders' spending on private benefits when corruption drops. If much of that *ETC* was simple

prior ETC for SOEs and nonSOEs in more marketized provinces. The key difference is that the regressions include industry fixed effects as well as province and firm characteristics.

waste, and unrelated to building firm value-increasing connections, reducing that waste would boost SOE valuations across the board.

Thus, our findings suggest that the Eight-point Policy unreservedly boosted SOE share valuations by checking *ETC* associated with insider's private benefits; but reduced the valuations of those nonSOE whose *ETC* is more likely to be bureaucracy gear greasing while boosting the valuations of those nonSOE whose *ETC* is more likely to be managerial private benefits.

To graphically summarize these patterns, albeit sacrificing statistical efficiency, we re-estimate the regressions in Table VI separately – twice for each province, once using all nonSOEs based in the province, then using all SOEs based in the province. The graphs in Figure 5 plot the coefficients of *ETC*, *TFP*, *EFD* and GROWTH in each province's regression against that provinces' *Marketization* index. The plots show nonSOE firms' productivity, external finance dependence and growth potential become positively associated with cumulative returns only in provinces with better than median market institutions development. The province-level regression coefficients estimated using SOEs are generally not significantly different from zero, and are distributed more evenly across *Marketization* levels.

Consistent with *ETC* proxying more for past investment in connections amongst nonSOEs than amongst SOEs, the figure shows most provinces having negative *ETC* coefficients in their nonSOE regressions, but over half having positive coefficients in their SOE regressions. Also, provinces' nonSOE regression *ETC* coefficients rise from negative to positive territory as their *Marketization* indexes increase; their SOE regression *ETC* coefficients do not. The SOE coefficients' pattern is consistent with their *ETC* reflecting waste or insider private benefits.

In low-*Marketization* provinces, nonSOE stock price reactions are more negatively and significantly related to *External Finance Dependence* and *Growth Potential* as well. This is

consistent with investors expect cutting corruption to raise barriers to "getting things done" in those provinces, and with this particularly adversely affecting nonSOEs with higher growth potential and external financing needs.

4.5. Change in Firm Performance

The above tests all focus on shareholders' expectations. This section explores how firm-performance measures change around the introduction of the Eight-point Policy. One such measure is changes in firm valuation, measured as its daily market-to-book ratio averaged over the year after the passage of the policy (2013) minus the same average over the year before (2012). This is essentially the change in its Tobin's Q, and we denote this ΔQ. We also use the firm's return on assets in 2013 minus its return on assets in 2012, denoted ΔROA, and its sales growth in 2013 minus its sales growth in 2012, ΔSG, to measure change in operating performance. The data used to construct ΔROA and ΔSG are adjusted for differential inflation using provincial level CPI indexes with 2010 as base year from the PRC National Bureau of Statistics. We then run regressions explaining ΔQ, ΔROA, and ΔSG with the same variables used in the previous two tables.

We interpret these regressions cautiously. Many economic implications of an effective anti-corruption policy may well not appear the next year, but might nonetheless become evident over the longer term. Furthermore, while the Eight-point Policy was the only news event of importance in or near our event windows, it was obviously not the only important news in the two surrounding years. Other news doubtless adds noise to these year-on-year changes. These caveats in place, we turn to the results in Table VIII.

In Panel A, the explained variable is ΔQ. In the nonSOE sample, regressions explaining ΔQ echo those explaining event window returns and abnormal returns in Tables VI and VII. Specifically, firms' valuation ratios rise more if they are based in provinces with more developed

market institutions, higher education spending and higher past GDP growth. Valuation ratios rise even more for firms based in more marketized provinces and also having high prior productivity and external financial dependence. Importantly, as in Tables VI and VII, nonSOE valuation ratios drop with *ETC* only in low-*Marketization* provinces.

The blocks of cross-terms of the *Marketization* sub-indices and firm characteristics echo those in the previous tables; namely, the cross terms with *Financial Sector Marketization* are jointly highly significant, those with *Resource Allocation* have a joint p-value of 15%, and those with *Legal Environment* are jointly insignificant.

In the SOE sample, regression 5 reveals the coefficient on *ETC* to be insignificant, but *ETC*'s cross term with *Marketization* is positive and significant. Regression 6 shows *Legal Environment* echoing its insignificance in the previous tables. These findings are consistent with *ETC* by SOEs funding more insider private benefits, so that the crackdown boosts shareholder valuations. Moreover, and in contrast to the corresponding regression above, more productive SOEs in more marketized provinces exhibit higher Δ*Q*s. Moreover, as the anti-corruption campaign gained force, more market-based capital allocation, as captured by *Financial Sector Development*, correlates with higher SOE valuations over this somewhat longer horizon.

Panels B and C, regressions explaining ΔROA and ΔSG, respectively, exhibit similar patterns to those in the previous tables. However, in Table VIII, the SOE and nonSOE results are also more similar to each other. Notably, SOEs with higher productivity and in industries more growth potential exhibit accelerated sales growth and, to a lesser extent, increased ROA, if domiciled in provinces with more developed market machinery. Overall, the results are consistent with the intensifying anti-corruption campaign inducing more market-based resource allocation, even among SOEs.

4.6 Robustness Discussion

4.6.1 Statistical Robustness

Our findings survive a battery of robustness checks. Where a robustness check generates a pattern of signs and statistical significance identical to that in the tables, and point estimates roughly concordant to those in the tables, we say qualitatively similar results ensue. Where qualitatively similar results do not ensue, we explain the discrepancies in detail.

To ensure that our results are not driven by outliers, we repeat our cumulative return regressions excluding observations whose estimated residuals exceed ±2.5 time the standard deviations of the residuals. Qualitatively similar results ensue.

To ensure that our results are not driven by unusual provinces, we first exclude firms based in Tibet, whose cultural, social, political, and economic characteristics differ substantially from those of other provinces. This generates qualitatively similar results. We next exclude firms based in Beijing and Shanghai, as these are China's most developed province-level jurisdictions and because firms with nationwide operations tend to be headquartered in them. This also generates qualitatively similar results. Finally, we drop firms based in Beijing, Shanghai, and Tibet to ensure that the results do not depend on the contrast between China's most and least developed provinces. This too generates qualitatively similar results.

Financial and real estate firms are regulated differently from other firms, so we next repeat our tests dropping firms in those sectors.[11] Dropping firms in finance, real estate, and in both sectors all yield qualitatively similar results.

[11] A separate reason is that financial firms, e.g., state run banks, may be very national. Their economic fortune may be affected not just by the development of their home provinces but by many provinces. These banks are all headquartered in Beijing or Shanghai, so the abovementioned robustness check dropping firms headquartered in Beijing and Shanghai excludes them.

We use total assets to measure firm size and scale R&D and *ETC* by total sales. Rerunning our tests using total assets to scale R&D and *ETC* yields qualitatively similar results.

The firm-level tests cluster separately by industry and province (two-way clustering). Redoing the tests clustering by industry only, by province only, or by industry-province cell all generate identical signs and point estimates to those in the tables, but uniformly higher t-ratios than those in the tables. We therefore present two-way clustering results as the most conservative.

Our tests use Chinese stocks trading in the two mainland stock exchanges – Shenzhen and Shanghai. We re-estimate Table II using Chinese mainland firms listed in Hong Kong. Precisely the same pattern ensues. The 3-day cumulative return of the portfolio of these shares is a significantly positive 1.89% ($p < 1\%$), with only 22% declining. The 5-day cumulative return of the portfolio is also significantly positive: 2.83% ($p < 5\%$) with only 21% declining. This contrasts with the insignificant +0.40% and +0.57 three and five-day cumulative returns, respectively, for the portfolio of all other Hong Kong stocks. Of these, 57% and 52% decline in the three and five day windows, respectively.

Because foreign investors have unrestricted access to the Hong Kong market, listed mainland companies' share prices can be interpreted as gauging Hong Kong and international investors' expectations about the reforms. These results are consistent with Hong Kong and international investors also viewing the Eight-point Policy announced on Dec 4th 2012 as positive economic news. Unfortunately, most of these shares are not cross-listed on mainland exchanges, and Hong Kong accounting rules do not mandate the disclosure of entertainment and travel costs. The 81 cross-listed shares constitute a sample only 3.6% the size of the full sample

of mainland stocks, and this is insufficient to allow meaningful statistical comparisons.[12]

Information leakage is a potential concern in event studies. Figure 2 shows internet searches for 'anti-corruption' (反腐) rising slightly somewhat before their much larger spike on and immediately after our event date. Checking news reports revealed a Nov. 20th 2012 Xinhua (official news agency) report describing a Central Commission for Discipline Inspection (CCDI) submission to the 18th National Congress on the need to eliminate corruption immediately. The date was just after the handover of power from the old to the new administration, and thus might be an alternative event date if investors viewed the CCDI submission as marking a genuine crackdown on corruption, rather than a repetition of prior Politburos' rhetoric condemning corruption.

To explore this, we examine stock returns around Nov. 20th 2012. In contrast to the significant positive reactions evident around the Dec. 4th event date, the market return in a three-day window around Nov. 20th is an insignificant 0.82% that is also relatively narrowly based (38% of all stocks dropped). The 5-day cumulative return is -0.54%, and insignificant with 51% of all stocks declining. This exercise supports the validity of our using an event framework to explore expected economic implications of decreased corruption.

4.6.2 Robustness of Interpretation

This section examines two plausible concerns about the economic interpretation of our findings. Each examination describes additional tests that weigh in favor of the interpretation we propose and against the plausible alternatives.

[12] They also may not be representative of mainland-listed stocks (Hung et al., 2012).

One alternative interpretation is that lower *ETC* might merely mark better governed firms. If so, and if reduced corruption let better run firms move forward faster, we might observe the results in Table V: higher share price gains for firms with lower *ETC*. But this would merely reflect those firms being better run in general.

However, the regression results in Tables VI, VII and VIII, which control for industry fixed effects as well as province and firm characteristics, weigh against this alternative explanation. Tables VI and VII show a negative relation between *ETC* and stock price reactions for nonSOEs in less marketized provinces, but a positive relation between prior *ETC* and stock price reactions for SOEs and for nonSOEs in more marketized provinces.. Table VIII shows an identical pattern of signs and significance in regressions explaining changes firms' Q ratios, returns on assets, and sales growth rates from 2012 to 2013 in less marketized provinces. These results are consistent only with lower-ETC being worse run only if the firms are nonSOEs in less marketized provinces. However, that set of results plus those for SOEs and nonSOEs in more marketized provinces are readily explained if *ETC* is a mix of investment in firm-value-creating connections and private benefits, the former being most valuable to nonSOEs in less marketized provinces.

Another concern is the interpretation of "*Marketization*". Importantly, our firm-level findings reveal more positive share price reactions for more productive, higher valuation, and more external finance-dependent firms if located in more reformed provinces and more negative share price reactions for higher *ETC* firms if located in less reformed provinces. An alternative explanation might be that higher *Marketization* scores merely mark better run provinces. If so, the anti-corruption policy might be better enforced in better run (higher *Marketization*) provinces, and this, rather than stronger market machinery and less value in connection-building,

might underlie our findings. However, several empirical findings weigh against this alternative interpretation.[13]

First, in regressions (3) and (6) in Tables VI, VII, and VIII, the interactions of *Total Factor Productivity*, *External Finance Dependence*, *Growth Potential*, and *ETC* with the *Legal Environment* subindex, which measures judicial efficiency and plausibly better proxies for general government efficiency, are generally individually and jointly insignificant.[14] If better enforcement drove our findings, this subindex would stand out among the interaction results. It does not: instead, interactions with the subindexes gauging nonSOEs' access to finance and the importance of the private-sector are significant.

Second, if the Eight-point Policy were better enforced in more marketized provinces, we might expect larger drops in *ETC* for firms based in such provinces. This is not observed. To explore this, we construct province-level changes in *ETC*. That is, for all firms based in each province, we sum firm-level *ETC* in 2013, subtract the analogous sum in 2012, and scale this difference by the sum of firm-level sales in 2012. More negative values of this variable indicate deeper *ETC* cuts in general by firms based in the province. The correlation of provinces' changes in *ETC* with their *Marketization* indexes is +0.156 (p = 0.40). In province-level regressions

[13] Details of the additional tests described here relating to this alternative hypothesis are available upon request.

[14] The few intermittently significant interactions in these regressions are consistent with the quality of legal enforcement being of secondary importance. Sporadically significant interactions of *External Finance Dependence* with the legal subindex in nonSOE regressions (Panels A and B of Tables VI and VII, Panel B of Table VIII) are consistent with reduced corruption boosting nonSOE valuations by increasing their access to external financing under better legal systems, as in Allen et al. (2005) and Agarwal et al. (2015). The significant interactions in two SOE regressions of *ETC* with the *Legal Environment* subindex (Panel A in Tables 6 and 8) are consistent with reduced corruption creating more value for SOEs, whose higher past *ETC* was largely unrelated to connection-building, in provinces with better legal systems. The significant interactions of *TFP* with the *Legal Environment* subindex for SOEs (Panels B and C of Table VIII) are consistent with less corruption boosting better-run SOE valuations where law enforcement is better. The secondary importance of interactions with the *Legal Environment* is attested by the joint insignificance of these blocks of interactions in all regressions except (3) in Panel B of Table 8.

explaining this change in *ETC* variable and controlling for 2012 per capita GDP and 2002 *ETC* over sales, the *Marketization* index remains insignificant (β = +0.01, p = 0.24). We repeat this exercise constructing changes in *ETC* for each province's SOEs and nonSOEs as two separate variables and obtain results qualitatively similar to those reported above with both. Overall, these findings do not support a systematic relationship between a province's *Marketization* and the reduction in *ETC* by its firms.[15]

Third, firm-level regressions show nonSOEs' share price reactions around the reform rising with *ETC* in provinces whose market reforms are more advanced than in Hainan, but falling with *ETC* in provinces whose *Marketization* index is at or below that level. If the anti-corruption policy were less vigorously enforced in lower *Marketization* provinces, its effect would be attenuated (that is, become closer to zero) in such provinces. That the effect becomes increasingly negative in very low *Marketization* provinces is inconsistent with this alternative explanation, but readily explicable if cutting corruption makes it harder for firms to get anything done in those provinces.

Fourth, the Party is plausibly stronger, not weaker, in less reformed provinces. Given this, our findings are consistent with investors expecting cadres in less marketized provinces to be strongly compelled to obey Eight-point Policy, but with this failing to improve resource or capital allocation.

[15] Another test related to this issue is possible if province-level *ETC* growth measures ex-post enforcement heterogeneity. Augmenting regressions (3) and (6) in Tables VI, VII, and VIII with this variable and its interactions with *TFP*, *External Finance Dependence*, and growth opportunities leaves the interactions with the *Marketization* index or sub-indices essentially unchanged. The interactions of provincial *ETC* growth with these variables are individually and jointly insignificant, with the sole exception that nonSOEs with higher past *ETC* gain significantly less where province-level *ETC* dropped more. One interpretation of this is that nonSOEs with more prior investment in connections lost more in provinces whose sharper drops in *ETC* market stronger enforcement of Eight-point Policy. Unfortunately, this test uses future ETC changes to explain event window returns, rendering its econometric interpretation problematic.

Still other alternative explanations might have traction. Provinces with stronger market machinery might have larger supplies of potential top executives whose training or talents lie in boosting productivity. Both SOEs and nonSOEs might react to a less corrupt business environment by seeking to replace old top managers, whose expertise is connection-building, with new ones whose expertise is increasing productivity. If investors expected this shift to be more complete in more marketized provinces, our results might follow.

Finally, and more generally, the market machinery measures, *Financial Sector Marketization* and *Resource Allocation*, could reflect hidden province characteristics such as a culture more supportive of entrepreneurship, a history of commercial activity, greater openness to foreign ideas, or any other latent factor that, when intervention by corrupt officials is blocked, effects better resource allocation. We accept alternative explanations of this ilk as friendly amendments to the one we posit. Variation in some province characteristic, highly correlated with progress on market reforms, may well explain the heterogeneous stock price reactions we observe. We welcome further research exploring alternative explanations of our findings.

5. Conclusions

China's per capita GDP, among the lowest in the world in 1978 when Deng Xiaoping began market reforms, has reached global middle-income levels. Those reforms created a hybrid system, accurately called Market Socialism with Chinese Characteristics, in which the Communist Party of China exercises a constitutionally entrenched Leading Role. In practice, this grants officials sweeping discretionary powers to reinterpret, waive, or enforce laws and regulations. The money at stake in swaying these officials' decisions has grown in step with the economy to the point

that rampaging corruption may well be locking into power a stable network of political rent-seeking-based cronyism that risks undermining the Party's legitimacy.

Such problems are not unique to China. Corruption is associated with the slow growth (Shleifer and Vishny, 2002) and exacerbated inequality (Alesina and Angeletos, 2005) characterizing the so-called Middle Income Trap, a stable low-level equilibrium characterized by pervasive political rent-seeking thought to have ensnared many economies (Rajan and Zingales, 2003, 2004). Entrapped economies' resources flow into building connections, which have negative economy-level spillovers, rather than increasing productivity, which has positive economy-level spillovers (Murphy et al., 1991, 1993). The equilibrium is stabilized by connected firms' increasing returns to scale from learning-by-doing in political rent-seeking (Morck et al., 2001) and commensurately increasing concern for preserving their political rents (which let them get things done that unconnected firms cannot); officials' interests in firms' continued spending on connections; and the interests of both in concealing their past behavior.

Our findings show that the Eight-point Policy, an initially unexpectedly genuine anti-corruption drive, initiated by the incoming Politburo of Xi Jinxing on December 4th 2012, only twenty days after the prescheduled transfer of power from the outgoing Politburo of Hu Jintao politburo, destabilized this situation. Listed firms' market valuations rose broadly and significantly around this event, consistent with markets expecting the reforms to be meaningful, rather than propaganda, as well as beneficial on net to public shareholders. These findings support prior work arguing that corruption destroys value by impeding efficient resource allocation (Krueger, 1974; Murphy et al., 1991, 1993; Shleifer and Vishny, 1993; Mauro, 1995; and others).

However, some stocks gained markedly more than others around this event, and these

patterns illuminate the economics of corruption. The key additional results are:

1. Listed SOEs' shares gained more than nonSOEs' shares.
2. Firms located in provinces whose market reforms were more advanced gained more.
3. More competitive firms, more external finance-dependent firms, and less connected firms all gain more if the firms are located in provinces with more advanced market reforms. These differences are also more pronounced for nonSOEs than for SOEs.
4. The stocks of nonSOEs in less reformed provinces gain less if they had reported higher entertainment and travel costs (*ETC*).

Similar patterns in firm' Q ratios, returns on assets, and sales growth rates suggest that investors revaluations of stocks around the event date correctly presages underlying real changes.

These findings support and extend previous work on pervasive political rent-seeking constituting a stable low-level equilibrium, in which firms invest in "connections" to "grease the gears" of an otherwise immovable bureaucracy (Wei, 2001; Fisman, 2001; McMillan and Woodruff, 2002; Li et al., 2008, and others). Perhaps more importantly, our findings further extend this line of work by suggesting that prior market reforms might help open a path out of this low-level equilibrium.

Our finding that nonSOEs gain less than SOEs supports this work. Chinese SOEs are integral parts of the state and Party command and control apparatus, and are therefore innately well-connected. NonSOEs, more removed from that apparatus, depend more on "greasing the gears" to "get things done". By reducing expected corruption, the Eight-point Policy cut expected costs SOE shareholders saw as mostly waste, so SOE shares rose. In contrast, nonSOE shareholders saw the reforms as severing valuable connections, at least in part, and nonSOE shares gained less.

Our finding that firms in less reformed provinces gain less than firms in more reformed provinces further reinforces this view. "Greasing the gears" is plausibly more important where the state and Party command and control apparatus remains more powerful and market forces are commensurately weaker. If investors expected reduced corruption to leave bureaucratic gears grinding slower in less reformed provinces, this would trim the stock price gains of firms in those provinces.

The above two arguments combined point to nonSOEs in less reformed provinces depending most on connections to "get things done. These firms' stocks indeed gain the least from reduced expected corruption.

Additionally, the above findings highlight two qualitatively different components of corruption costs. One component is useful business connections, as discussed above (Wei 2001, Fisman 2001; McMillan and Woodruff 2002; Li et al. 2008, and others). The other component is pure private benefits for firms' insiders. Investors view the first corruption costs as firm value-increasing and the second as value decreasing. Shares in SOEs and nonSOEs in more reformed provinces gaining on expectations of reduced corruption suggests private benefits for insiders predominating in their corruption costs. Shares in nonSOEs based in less reformed provinces gaining little or nothing suggests value-enhancing connections comprising more of their corruption costs. Our findings show that firms' entertainment and travel costs reflect both corruption cost components, and suggest that future work using that variable allow for both components

Our findings also suggest that market reforms and corruption cutting reforms are mutually reinforcing. In China's more reformed provinces, which are also its more prosperous provinces, connections distorted market forces that would otherwise have directed capital and

resources to more productive nonSOEs, nonSOEs in higher growth industries, and more external finance dependent nonSOEs. Reducing corruption thus led to gains for those nonSOEs with higher past productivity records, better growth opportunities, and more need for external financing in those provinces. In other words, reducing corruption appears to improve resource allocation more where market reforms are more complete.

Our findings that "connections" benefit some firms' shareholders do not contradict prior work showing connections-based resource allocation to be suboptimal for the economy overall, perhaps profoundly so (Murphy et al. 1993). Rather, taken as a whole, they suggest that that extensive market reforms followed by reforms aimed at cutting corruption might help open a path out of this low-level equilibrium.

One factor stabilizing this equilibrium is connected firms' vested interest in protecting the value of their investment in connections. Prior market reforms, by eroding the value of connections to firms, weaken those vested interests.

A second stabilizing factor is officials' vested interests in the benefits they glean from firms' connection-building. Prior market reforms, by shifting firms' ETC away from connection-building and towards private benefits for firm insiders, also erode officials' vested interests in preserving the low-level high-corruption equilibrium.

Of course, this presumes that insiders' private benefits do not also ultimately accrue to officials. This presumption is perhaps unwarranted for SOEs, whose top insiders are career cadres, rotated in and out of any given SOE every three or four years by the Communist Party's Orgburo. Wu et al. (2014), Deng et al (2015) conclude that SOEs are run largely to advance their top insiders' positions after the next rotation. Consequently, SOEs top executive's private benefits might include using their SOEs' resources (including ETC) to provide favors to officials

in return for personal favors such as career advancement. However, prior market reforms counter this vested interest too. Our findings that anticorruption reforms boost SOE valuations more where market reforms are more complete make SOE privatization more lucrative for revenue-hungry governments where market reforms are more complete.

Some caveats merit note. First, the extent of market reforms in Chinese provinces may well correlate with other dimensions of economic, social, or political development. A series of tests weigh against the alternative explanation that shareholders expect provinces that were better at implementing market reforms previously to be better at implementing the anticorruption reform too. Still, the anticorruption reform also elicits more positive stock price reactions for firms in provinces with higher past GDP growth, education spending, and private sector shares of economic activity. Our main results all survive controlling for these development measures, but yet other alternative development measures might nonetheless prove more important. The conclusion would then be modified as to the precise prior reforms that mattered, but the conclusion that prior reforms correlated with market development matter would stand. We posit market reforms as critical because prior work stresses political rent-seeking as inimical to markets (Murphy et al., 1993).

Second, an event study measures changes in shareholders' expectations, but shareholders' expectations can be incorrect. Patterns in firm's accounting ratios change from the year before to the year after the anticorruption reforms parallel the patterns observed in their stock price reactions around the event date. Still, if unfolding developments ultimately reveal the Eight-point Policy to be a purge, rather than an even-handed attack on corruption, the results remain economically useful as evidence about what investors expected to happened upon a general drop in corruption is surely helpful information.

These caveats conceded, our findings coalesce to support the thesis that having more fully developed market machinery up and running expands the importance of winners relative to losers in an anticorruption reform. This has potentially important public policy consequences because vested interests benefiting from the status quo are apt to oppose such reforms. Public policy makers desiring to implement effective anticorruption reforms might consider prior pro-market reforms to shift the political economy balance towards more support for curtailing corruption.

Figure 1: Fraction of Chinese Respondents Viewing Issues as a "Big Problem"

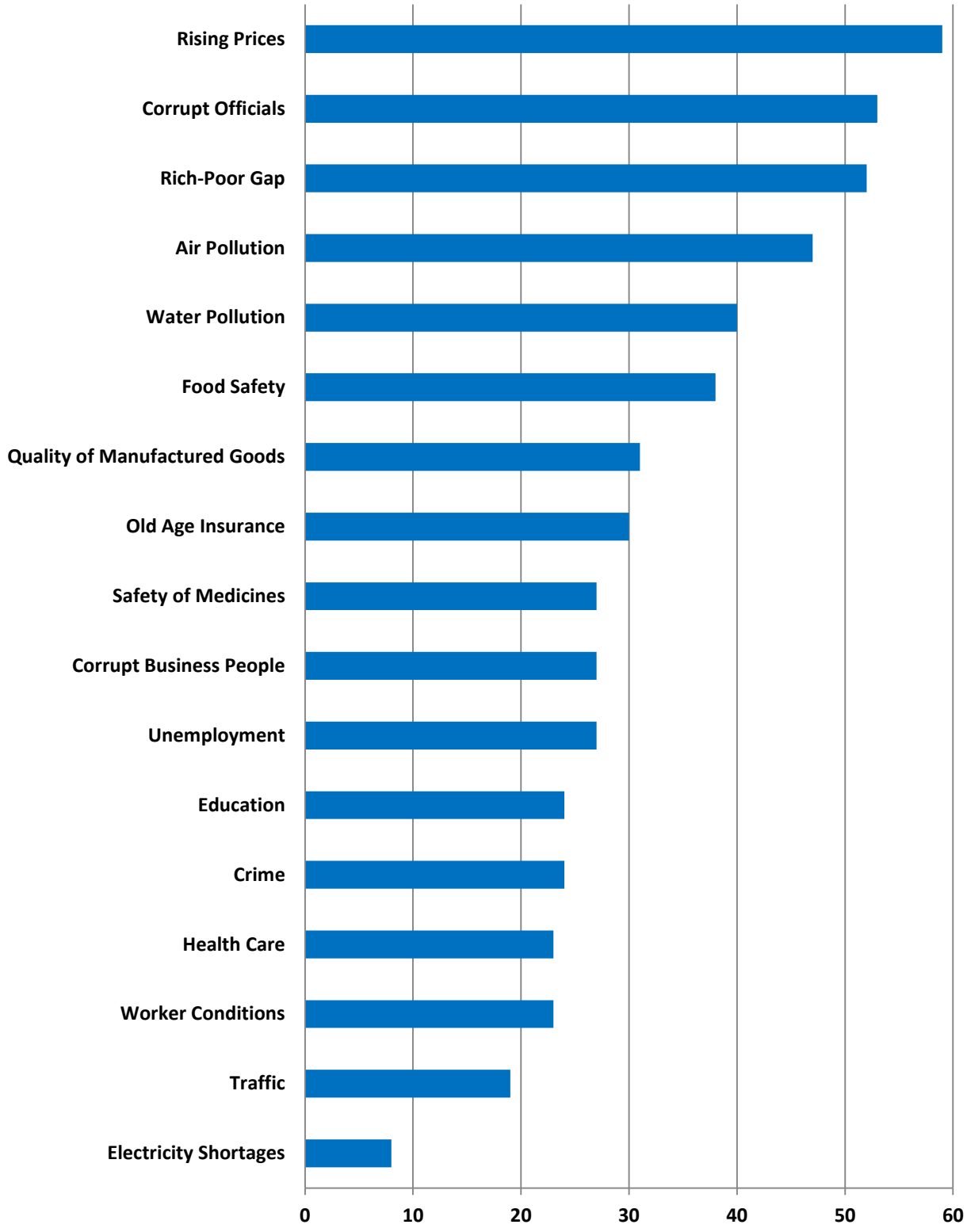


Figure 2: Online Attention to the Eight-point Policy

Panel A. Daily Baidu internet search volume for 'Eight-point Policy' (in Chinese, 八项规定), indicated by the solid line, and for 'anti-corruption' (反腐), indicated by the dashed line. The event date, Tuesday, December 4th 2012, is indicated by the dark gray band. The three-trading-day window, also includes the darker grey bands around the event date, and the five-trading-day window (which spans the weekend), also includes the light gray bands. Searches are scaled by their maximums, which occur on Thursday Dec. 6th for 'Eight-point Policy' searches and on Friday Dec. 7th for 'anti-corruption' searches.

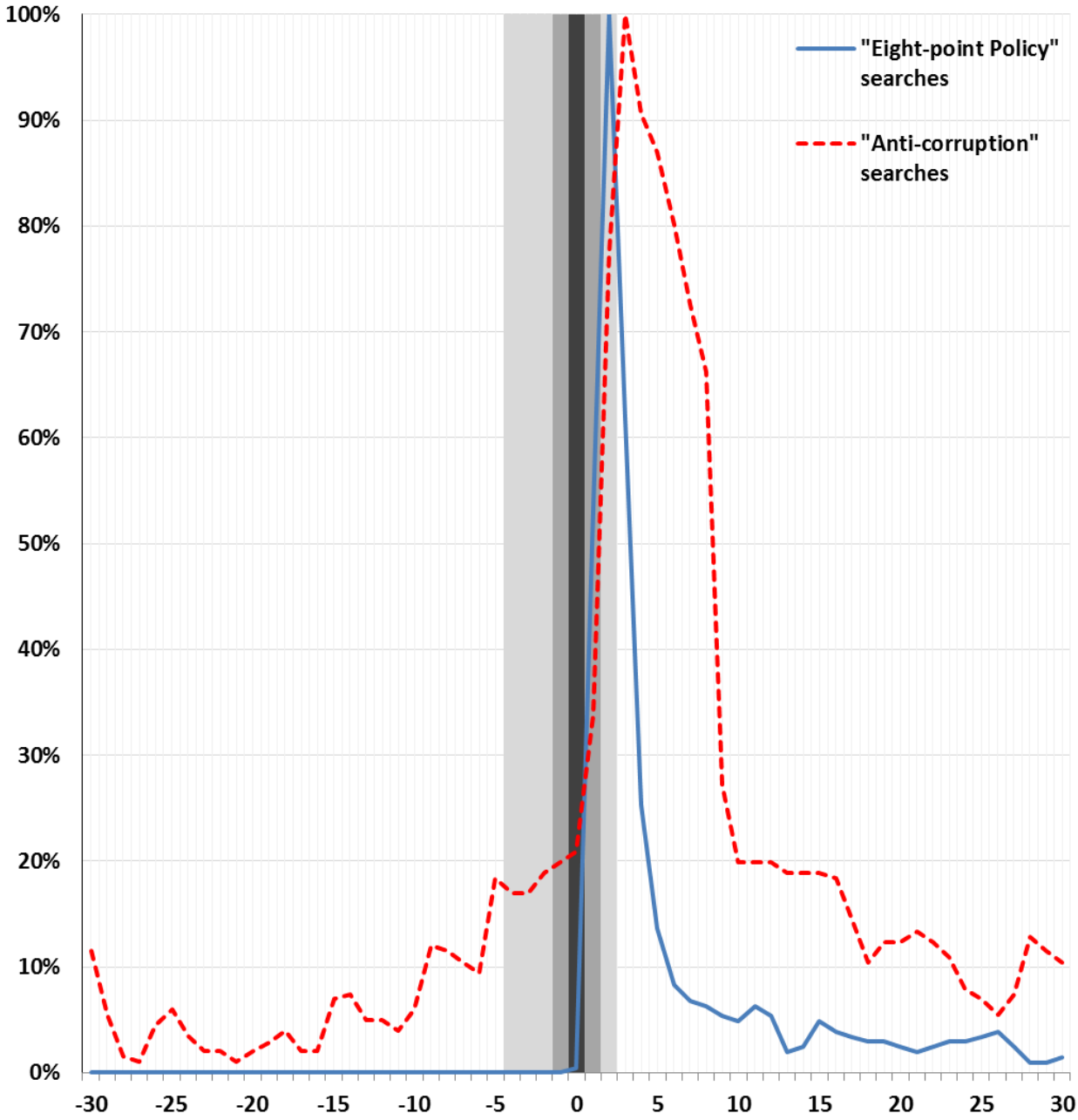


Figure 2 (Continued)

Panel B. Daily Baidu internet search volume for 'Eight-point Policy' (in Chinese, 八项规定), indicated by the solid line, and for 'anti-corruption' (反腐), indicated by the dashed line. The event date, Tuesday, December 4th 2012, is indicated by the dark gray band. The three-trading-day window, also includes the darker grey bands around the event date, and the five-trading-day window (which spans the weekend), also includes the light gray bands. Search volumes are scaled by the maximum for 'Eight-point Policy' searches, which occurs on Thursday Dec. 6th 2012.

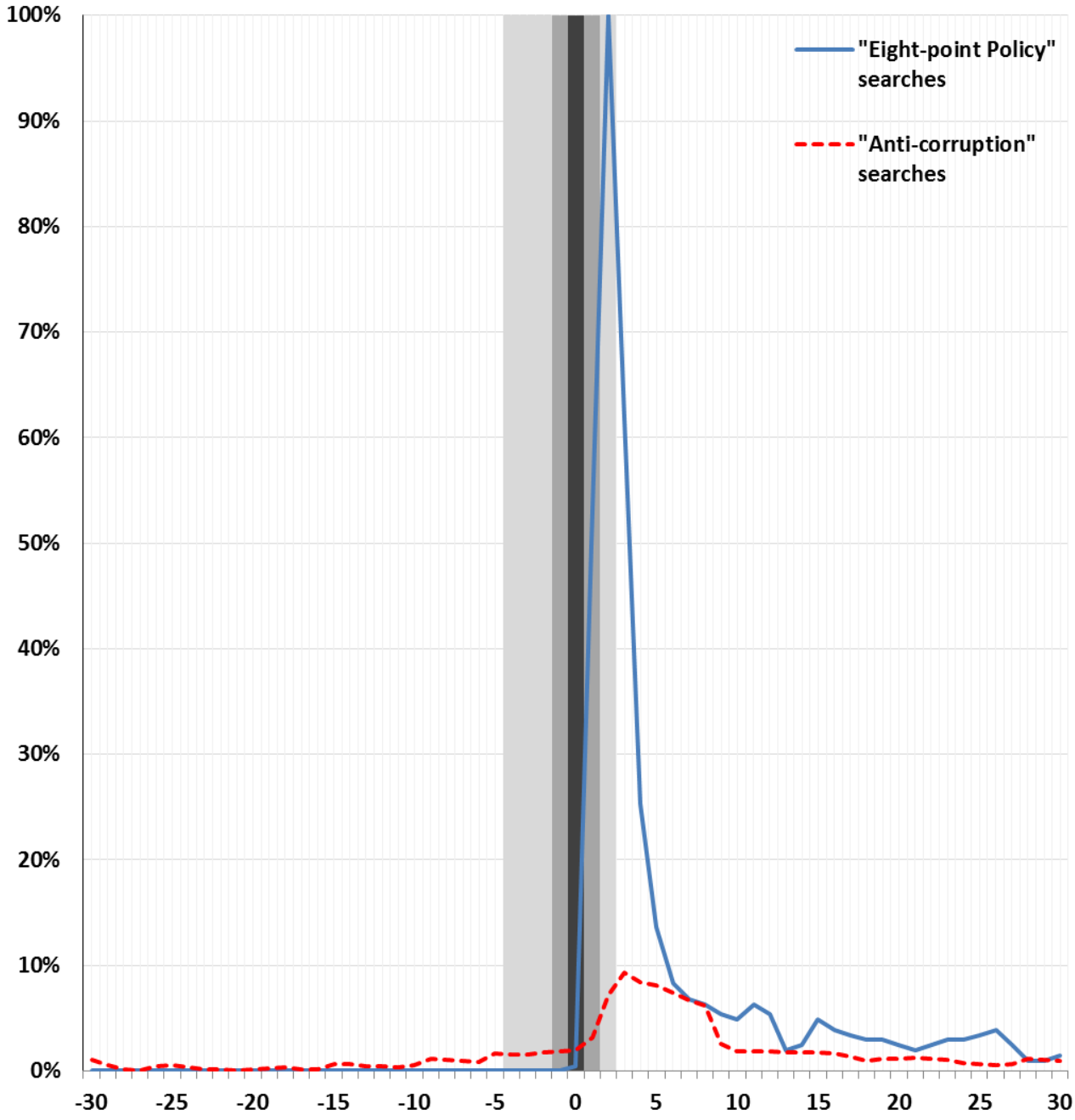


Figure 2 (Continued)

Panel C. Daily Baidu internet search volume for 'Eight-point Policy' (in Chinese, 八项规定), indicated by the solid line, and for 'Economic Development' (经济发展), 'Economic Growth' (经济增长), and 'Economic Reform' (经济改革) indicated by successively finer dashed lines. The event date, Tuesday, December 4th 2012, is indicated by the dark gray band. The three-trading-day window, also includes the darker grey bands around the event date, and the five-trading-day window (which spans the weekend), also includes the light gray bands. Searches are scaled by the maximum for 'Eight-point Policy' searches, which occurs on Thursday Dec. 6th 2012.

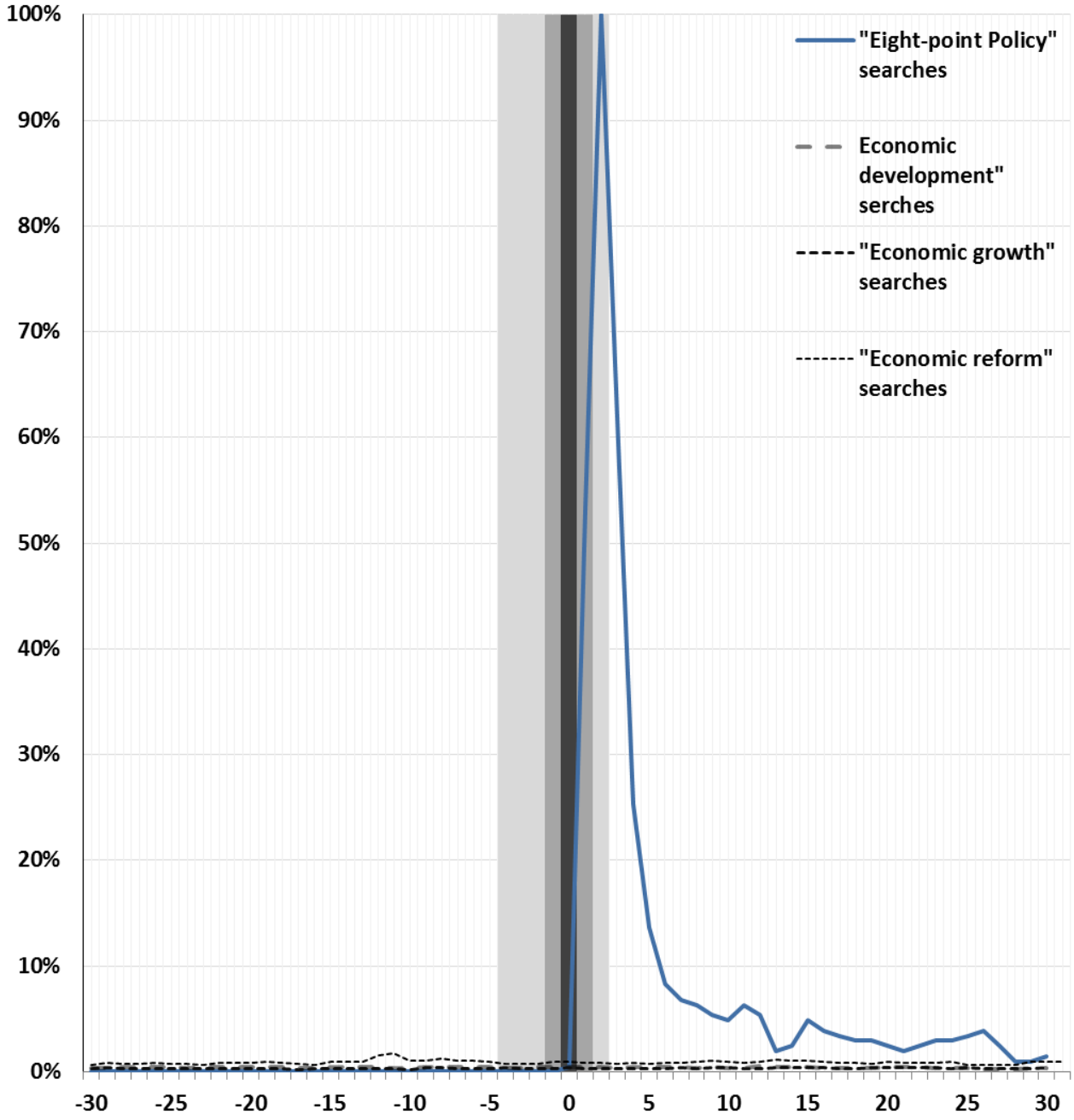


Figure 3: Cumulative Returns of Province Portfolios

Value -weighted cumulative returns for portfolios of all stocks based in each province-level jurisdiction in the three-day window surrounding the event date, the Dec. 4th 2012 submission of the Eight-point Policy to combat corruption.

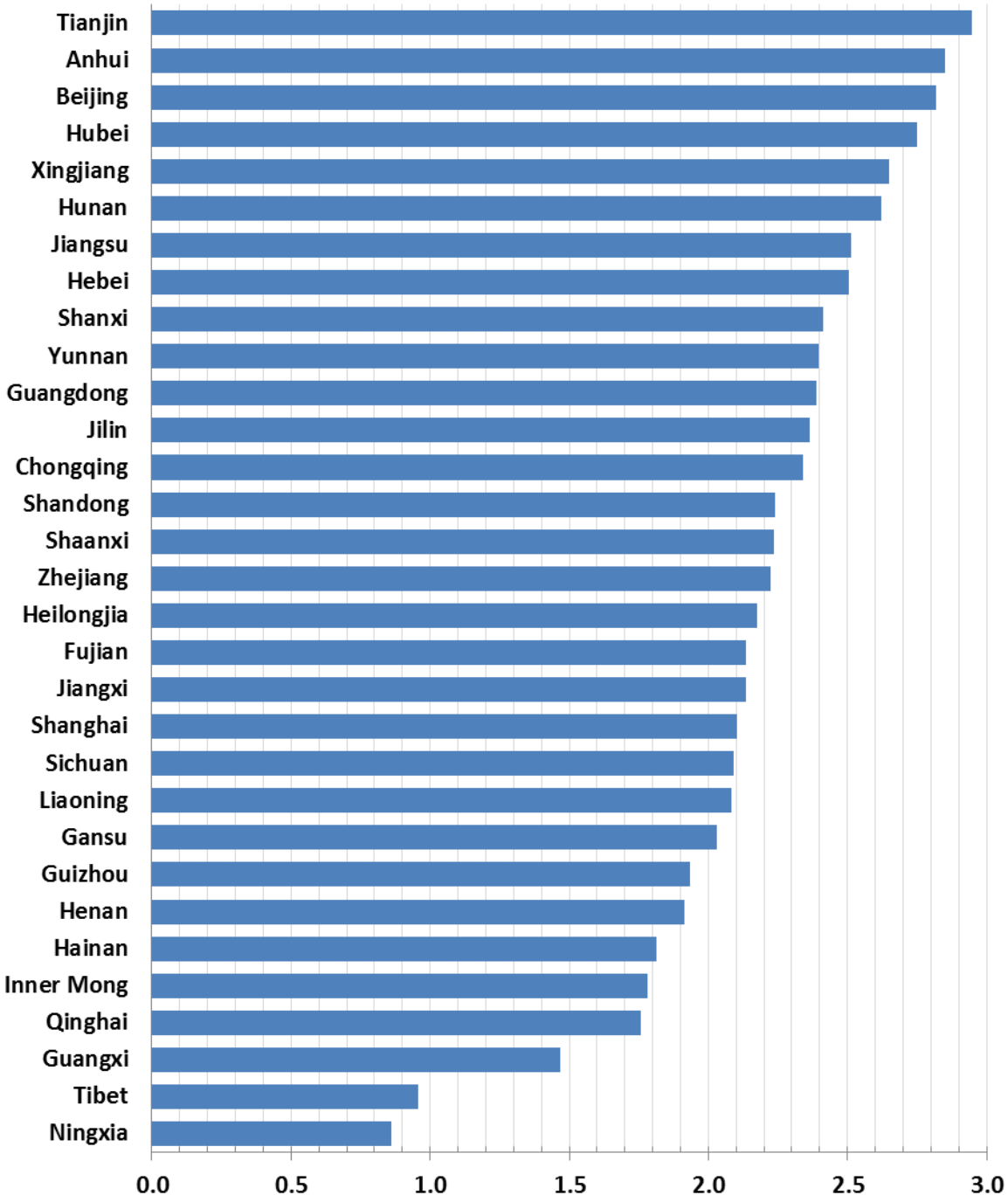
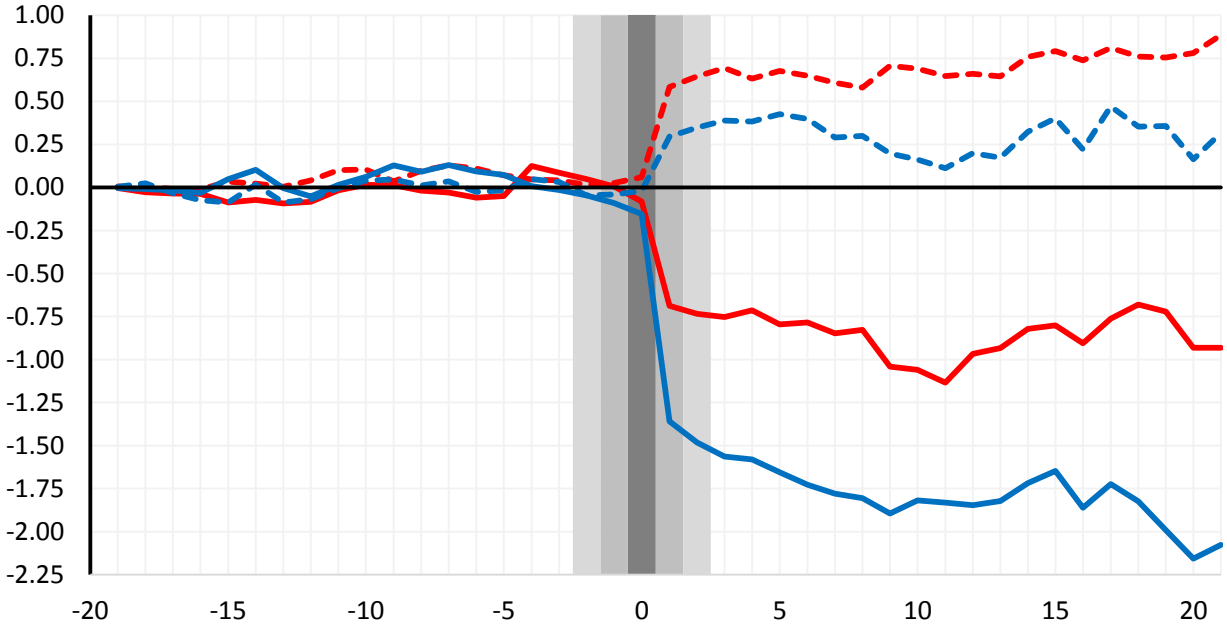


Figure 4: Cumulative Abnormal Returns around the Passage of the Eight Point Policy

Value -weighted cumulative abnormal portfolio returns in event time (trading days). The event date (Dec. 4th 2012) is day 0, denoted by the dark gray bar. Medium and light gay shading mark three and five-day event windows. Portfolios are high versus low entertainment and travel cost (*ETC*) firms in high versus low *Marketization* provinces.

Panel A. Non-State-owned Enterprises (nonSOEs)



Panel B. State-owned Enterprises (SOEs)

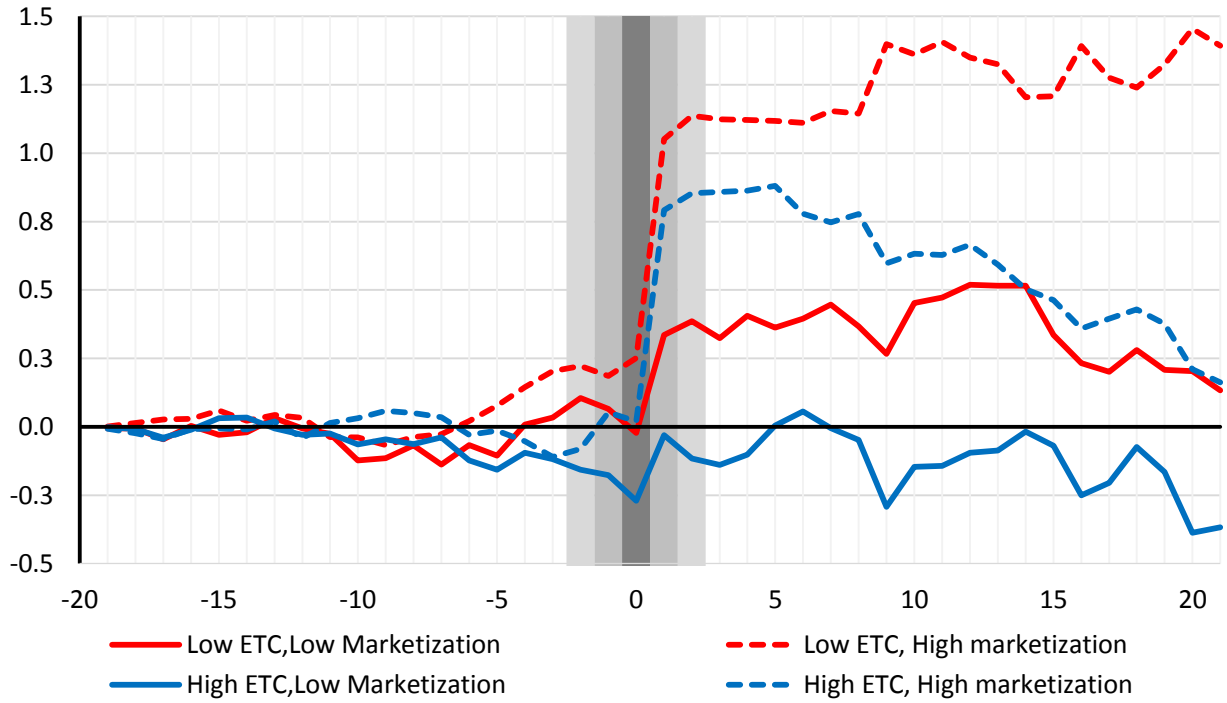


Figure 5: The Coefficients of Province Regressions vs. *Marketization*

For each province, we run two firm-level regressions explaining 3-day cumulative stock returns of nonSOEs and of SOEs in that province. The key explanatory variables are entertainment and travel costs (*ETC*), *Total Factor Productivity* (*TFP*), *External Finance Dependence* (*EFD*), and *Growth Potential* (*GROWTH*). Each regression also includes the firm and industry-level control variables included in the baseline regressions. Each graph plots regression coefficients of an explanatory variable (indicated on the vertical axis) against that province's *Marketization* index (horizontal axis). Significant and insignificant coefficients are marked with ✚ and ○ respectively. Solid lines represent regression fits; the adjacent shaded areas indicate 95% confidence limits.

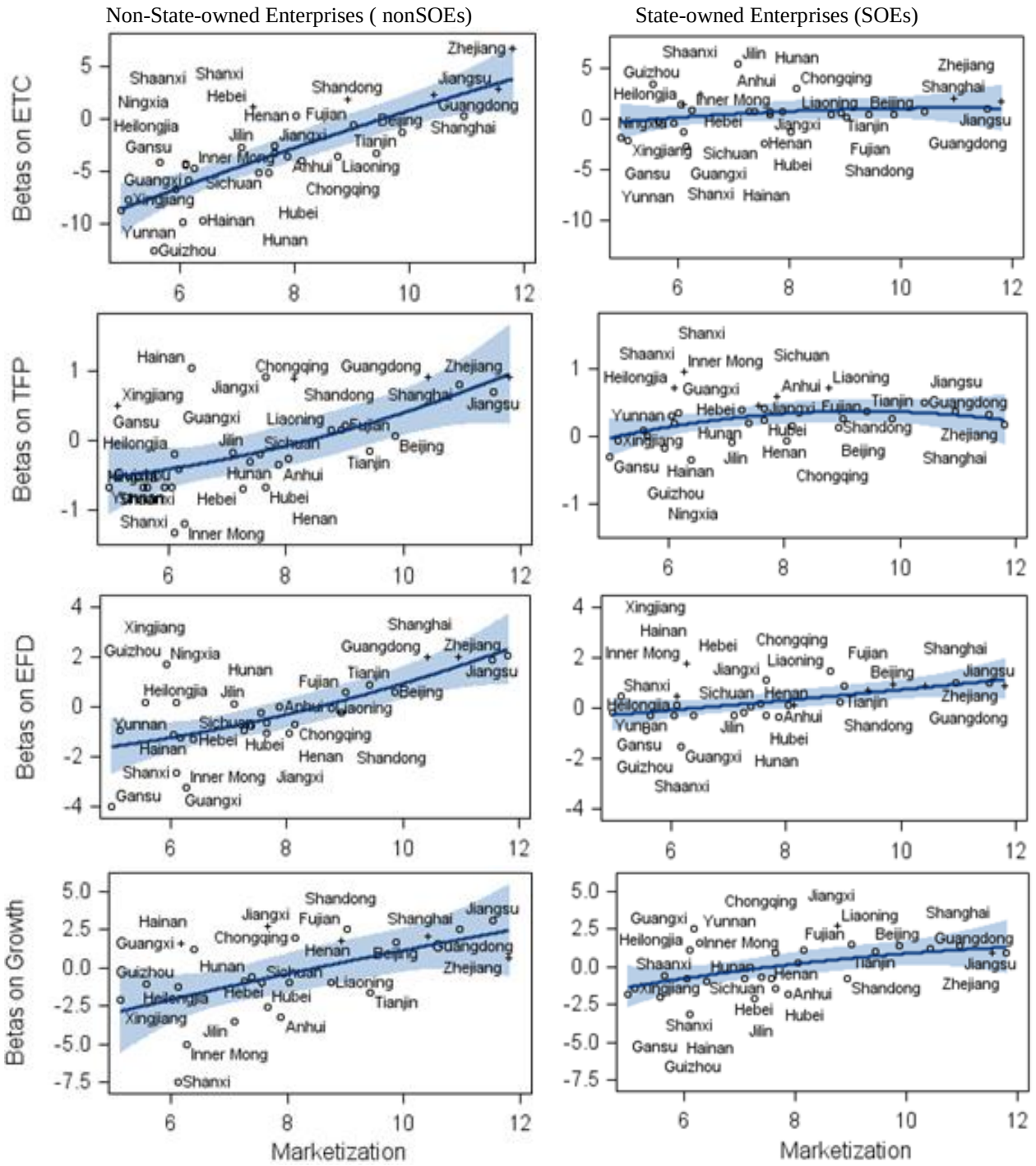


Table I

***Marketization* Index and subindexes, by province-level jurisdiction**

Province-level jurisdictions include provinces, province-level cities and autonomous regions. Indexes and subindexes are described in detail in Appendix III.

Province	*Marketization* index	*Marketization* Sub-indexes		
		Resource allocation	*Financial Sector Marketization*	Legal Environment
Zhejiang	11.8	9.1	12.7	6.9
Jiangsu	11.5	9.3	11.3	7.2
Shanghai	11.0	6.4	12.6	8.9
Guangdong	10.4	9.6	11.4	5.3
Beijing	9.9	6.9	10.3	6.5
Tianjin	9.4	8.7	10.5	6.8
Fujian	9.0	9.4	10.5	5.4
Shandong	8.9	10.3	11.3	4.4
Liaoning	8.8	7.2	12.1	5.1
Chongqing	8.1	6.9	10.7	5.7
Henan	8.0	8.5	11.0	3.9
Anhui	7.9	6.3	10.4	5.9
Jiangxi	7.7	6.5	9.9	5.0
Hubei	7.7	7.9	10.7	4.8
Sichuan	7.6	5.1	10.5	5.4
Hunan	7.4	7.4	9.9	4.1
Hebei	7.3	9.0	9.6	3.9
Jilin	7.1	6.6	9.4	5.4
Hainan	6.4	4.3	7.7	2.3
Inner Mongolia	6.3	6.9	9.9	2.9
Guangxi	6.2	6.0	9.7	4.0
Shanxi	6.1	6.0	10.4	4.0
Heilongjiang	6.1	6.2	8.4	4.0
Yunnan	6.1	3.2	10.8	5.7
Ningxia	5.9	2.2	10.2	3.0
Shaanxi	5.7	5.4	10.0	3.2
Guizhou	5.6	1.4	9.8	4.0
Xinjiang	5.1	3.2	8.3	3.8
Gansu	5.0	1.2	9.2	3.0
Qinghai	3.3	-1.4	7.3	4.1
Tibet	0.4	-23.3	5.9	-1.9

Source: National Economic Research Institute (NERI) data as reported by Fan et al. (2011)

Table II
Stock Market Reaction and Differentiate by *Marketization*

This table reports the value-weighted cumulative stock returns of market portfolios around the announcement of the eight point Policy on Dec 4th 2012. Low (High) *Marketization* indicates that the portfolio is formed based on firms domiciled in provinces having *Marketization* level in the bottom (top) tercile. Cumulative raw returns (*CRR*) and the percentage of firm having negative *CRR* (% Negative) are both reported. Panel A uses a 3-day window. The standard deviation used to test whether *CRR*(-1, 1) is significantly different from zero is the square root of 3 times the variance of daily stock returns from day -211 to day -11. Panel B uses a 5-day window, and a standard deviation used to test whether *CRR*(-2, 2) is significantly different from zero equal to the square root of 5 times the variance of daily stock return from day -211 to day -11. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Panel A: 3-day cumulative raw return

	All firms	
	CRR(-1, 1)	% Negative
All China	2.613**	25.9%
Low *Marketization* provinces	0.927	36.0%
High *Marketization* provinces	4.101***	21.9%

Panel B: 5-day cumulative raw return

	All firms	
	CRR(-2, 2)	% Negative
All China	3.323**	23.9%
Low *Marketization* provinces	1.641	35.0%
High *Marketization* provinces	4.824***	20.9%

Table III
Province Level Portfolio Raw Returns

This table summarizes regressions explaining the cumulative raw returns (*CRR*) of province-level portfolios around the passage of the Eight Point Policy on Dec 4th 2012. Province-level portfolios are value-weighted portfolios of the stocks of all listed firms headquartered in each province. Explanatory variables are the corresponding province's characteristics: *GDP Growth*, *GDP per capita*, *Education Spending*/GDP, and either the province's *Marketization* index or its sub-indices: *Resource allocation* gauges the extent to which market forces, rather than government officials, allocate resources. and is higher if the provincial government budget is a lower fraction of GDP; *Financial Sector Marketization* gauges nonSOEs' access to capital based on deposits in nonSOE financial institutions and the share of bank loans to nonSOEs; and *Legal Environment* measures courts' efficiency in resolving legal disputes based on a survey of business leaders. For detailed definitions, see Appendix III. The explained variable is a 3-day *CRR* in regressions 3.1 and 3.2 and a 5-day window *CRR* in 3.3 and 3.4 Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Explained variable	*CRR* (-1, 1)		*CRR* (-2, 2)	
	(1)	(2)	(3)	(4)
GDP Growth	0.112**	0.121**	0,094*	0.,095*
	(2.35)	(2.43)	(1.86)	(1.94)
Log(*GDP per capita*)	0.007	-0.066	-0.023	0.125
	(0.02)	(-0.23)	(-0.06)	(0.31)
Education Spending/GDP	0.303**	0.290**	0.420**	0.417**
	(2.44)	(2.24)	(2.37)	(2.32)
Marketization	0.193***		0.206***	
	(2.67)		(2.74)	
Resource Allocation		0.146***		0.197***
		(3.55)		(3.47)
Financial Sector Marketization		0.194**		0.194*
		(2.13)		(1.74)
Legal Environment		0.084***		0.065**
		(2.61)		(2.45)
Intercept	0.898	0.524	0.965	0.105
	(0.24)	(0.16)	(0.54)	(0.02)
Observations	31	31	31	31
Adjusted R-squared	33.83%	43.82%	24.95%	32.87%

Table IV
Province Level Portfolio Cumulative Abnormal Returns

This table summarizes regressions explaining the cumulative abnormal returns (*CAR*) of province-level portfolios around the passage of the Eight-point Policy on Dec 4th 2012. Province-level portfolios are value-weighted portfolios of the stocks of all listed firms headquartered in each province. Explanatory variables are the corresponding province's characteristics: *GDP Growth*, *GDP per capita*, *Education Spending/GDP*, and either the province's *Marketization* index or its sub-indices: *Resource allocation* gauges the extent to which market forces, rather than government officials, allocate resources. and is higher if the provincial government budget is a lower fraction of GDP; *Financial Sector Marketization* gauges nonSOEs' access to capital using deposits in nonSOE financial institutions and the share of bank loans to nonSOEs; and *Legal Environment* measures courts' efficiency in resolving legal disputes based on a survey of business leaders. For detailed definitions, see Appendix III. The explained variable is a 3-day *CAR* in regressions 3.1 and 3.2 and a 5-day window *CAR* in 3.3 and 3.4 Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Explained variable	*CAR* (-1, 1)		*CAR* (-2, 2)	
	(1)	(2)	(3)	(4)
GDP Growth	0.096*	0.113**	0.086*	0.104*
	(1.83)	(2.19)	(1.71)	(1.89)
Log(*GDP per capita*)	0.232	0.297	0.281	0.454
	(0.69)	(0.98)	(0.61)	(1.11)
Education Spending/GDP	0.330**	0.443***	0.460**	0.630***
	(2.34)	(3.29)	(2.16)	(3.48)
Marketization	0.147**		0.152**	
	(2.03)		(2.22)	
Resource Allocation		0.190***		0.267***
		(4.45)		(4.66)
Financial Sector Marketization		0.174*		0.151
		(1.84)		(1.43)
Legal Environment		0.050**		0.057*
		(1.99)		(1.76)
Intercept	-3.329	-6.071	-3.659	-6.865
	(-0.96)	(-1.21)	(-0.70)	(-1.47)
Observations	31	31	31	31
Adjusted R-squared	34.72%	45.21%	20.32%	35.46%

Table V

Returns, Market Development and Entertainment and Travel Costs (*ETC*)

This table reports the value-weighted cumulative stock returns of *ETC*/*Marketization* portfolios around the announcement of the eight point Policy. Low (High) *Marketization* indicates that the portfolio is formed based on firms domiciled in provinces having *Marketization* level at the bottom (top) tercile. Low (High) *ETC* indicates that the portfolio is formed based on firms having *ETC* ratio at the bottom (top) tercile. We report both the cumulative stock raw returns (*CRR*) and the percentage of firm having negative *CRR* (% Negative). We divide the full sample into nonSOEs and SOEs subsamples. In Panel A, a 3-day window is used. The standard deviation used to test whether *CRR*(-1, 1) is significantly different from zero is the square root of 3 x the variance of daily stock return from day -211 to day -11. In Panel B, a 5-day window is used. The standard deviation used to test whether *CRR*(-2, 2) is significantly different from zero is the square root of 5 x the variance of daily stock return from day -211 to day -11. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively

Panel A: 3-day cumulative raw return

	nonSOEs		SOEs	
	CRR(-1, 1)	% Negative	*CRR*(-1, 1)	% Negative
All	1.144	31.1%	4.141***	20.0%
Low *Marketization*	-0.077	41.3%	2.331**	22.1%
High *Marketization*	1.825*	25.0%	5.118***	18.0%
Low *ETC*	1.731	26.3%	4.923***	18.9%
High *ETC*	-0.332	43.5%	2.231**	22.3%
Low *Marketization*, Low *ETC*	0.671	37.7%	2.917**	21.6%
Low *Marketization*, High *ETC*	-0.660	46.6%	1.524*	22.9%
High *Marketization*, Low *ETC*	2.534**	22.1%	5.741***	16.1%
High *Marketization*, High *ETC*	0.443	38.3%	3.012**	21.9%

Panel B: 5-day cumulative raw return

	nonSOEs		SOEs	
	CRR(-2, 2)	% Negative	*CRR*(-2, 2)	% Negative
All	2.231	27.6%	4.721***	19.5%
Low *Marketization*	1.346	38.6%	2.914**	21.9%
High *Marketization*	2.919*	24.6%	5.613***	18.8%
Low *ETC*	2.708*	24.5%	4.537***	17.2%
High *ETC*	1.117	40.9%	3.621**	21.0%
Low *Marketization*, Low *ETC*	1.734	36.5%	3.309**	21.3%
Low *Marketization*, High *ETC*	0.435	44.4%	2.424*	22.6%
High *Marketization*, Low *ETC*	4.331***	19.7%	6.012***	16.1%
High *Marketization*, High *ETC*	1.907	34.4%	4.112***	20.5%

Table VI
Regression Analyses on Firm-level Cumulative Returns

Regressions explain 3-day (Panel A) and 5-day (Panel B) cumulative raw returns. Explanatory variables are interactions of *Entertainment And Travel Costs* (*ETC*), *Total Factor Productivity*, *External Finance Dependence*, and *Growth Potential* with either the market reform index (*Marketization*), or its subindexes (*Resource Allocation*, *Financial Sector Marketization*, and *Legal Environment*). Regressions include main effects for the index (or subindexes), *ETC*, and *Total Factor Productivity* (industry fixed effects subsume *External Finance Dependence* and *Growth Potential* main effects); provincial *GDP Growth*, Log(*per capita GDP*) and *Education Spending/GDP*; and firm-level controls (*Firm Size*, *Leverage*, and *R&D*). Appendix III presents detailed definitions of all variables. T statistics are in parentheses. Significance at 10%, 5% and 1% levels indicated by *, **, and ***, respectively.

Panel A: Explained variable is 3-day cumulative raw return *CRR*(-1,1)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(4)	(5)	(6)
ETC	-1.618***	-8.18***	-13.7***	0.047	-0.495	-0.563
	(-2.63)	(-3.33)	(-2.99)	(0.44)	(-0.62)	(-0.59)
Total Factor Productivity	0.056**	0.019	0.019	0.023	0.003	0.003
	(2.28)	(0.99)	(0.98)	(0.80)	(0.40)	(0.41)
GDP Growth	0.087**	0.069*	0.066*	0.059	0.050	0.050
	(2.27)	(1.82)	(1.81)	(1.49)	(1.08)	(1.14)
Log(*GDP per capita*)	0.150	0.524	0.523	0.207	0.098	0.095
	(0.36)	(0.91)	(0.94)	(0.57)	(0.23)	(0.21)
Education Spending/GDP	0.187	0.326**	0.312**	0.013	0.300	0.290
	(0.97)	(2.01)	(2.02)	(0.30)	(1.44)	(1.43)
Marketization	0.598***	0.033		0.204**	-0.064	
	(4.60)	(0.17)		(2.06)	(-0.30)	
*Marketization*Total Factor Productivity*		0.029*			0.012	
		(1.77)			(1.16)	
*Marketization*External Finance Dependence*		0.032**			0.015	
		(2.12)			(1.34)	
*Marketization*Growth Potential*		0.141**			0.159**	
		(2.29)			(2.11)	
*Marketization*ETC*		1.258***			0.465**	
		(3.09)			(2.25)	
Block 1: Resource allocation						
Resource Allocation			-0.147			0.069
			(-0.30)			(0.22)
*Resource Allocation*Total Factor Productivity*			0.010			0.004
			(1.43)			(0.72)
*Resource Allocation*External Finance Dependence*			0.012			0.005
			(1.56)			(0.85)
*Resource Allocation*Growth Potential*			0.079*			0.104*
			(1.86)			(1.71)
*Resource Allocation*ETC*			0.506**			0.026
			(2.26)			(0.73)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-0.320			-0.214
			(-0.75)			(-0.70)
*Financial Sector Marketization*Total Factor Productivity*			0.028*			0.015
			(1.83)			(0.36)
*Financial Sector Marketization*External Finance Dependence*			0.034*			0.021
			(1.91)			(0.84)
*Financial Sector Marketization*Growth Potential*			0.145**			0.183*
			(2.12)			(1.83)
*Financial Sector Marketization*ETC*			1.076***			0.513*
			(2.82)			(1.90)
Block 3: Legal environment						
Legal Environment			1.016			0.024
			(1.26)			(0.63)
*Legal Environment**Total factor productivity			-0.007			0.002
			(-0.58)			(0.23)
*Legal Environment*External Finance Dependence*			0.027*			0.014
			(1.84)			(1.08)
*Legal Environment*Growth Potential*			-0.056			0.058
			(-0.73)			(0.69)
*Legal Environment*ETC*			-0.176			0.463*
			(-0.46)			(1.82)
P-value of Block 1 coefficients joint F-test			0.067			0.357
P-value of Block 2 coefficients joint F-test			0.007			0.081
P-value of Block 3 coefficients joint F-test			0.212			0.337
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	23.38%	33.31%	38.34%	18.6%	20.89%	23.24%

Panel B: Explained variable is 5-day cumulative raw return *CRR*(-2,2)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(4)	(5)	(6)
ETC	-1.73***	-8.45***	-14.3***	0.032	-0.747	-0.461
	(-2.83)	(-3.43)	(-3.11)	(0.28)	(-1.13)	(-0.41)
Total Factor Productivity	0.052	0.013	0.012	0.013	-0.025	-0.023
	(1.50)	(0.68)	(0.60)	(0.47)	(-0.54)	(-0.54)
GDP Growth	0.071*	0.071*	0.067*	0.053	0.047	0.047
	(1.81)	(1.70)	(1.69)	(1.29)	(1.17)	(1.15)
Log(*GDP per capita*)	0.567	0.818	0.816	0.605	0.714	0.681
	(1.05)	(1.55)	(1.53)	(1.01)	(1.13)	(1.12)
Education Spending/GDP	0.158	0.308*	0.280*	0.012	0.253	0.229
	(0.80)	(1.89)	(1.86)	(0.16)	(1.14)	(1.11)
Marketization	0.493***	0.054		0.278**	-0.158	
	(3.55)	(0.11)		(2.11)	(-1.23)	
*Marketization*Total Factor Productivity*		0.024			0.008	
		(1.41)			(0.91)	
*Marketization*External Finance Dependence*		0.036**			0.012	
		(2.02)			(1.09)	
*Marketization*Growth Potential*		0.188**			0.121**	
		(2.05)			(2.03)	
*Marketization*ETC*		1.296***			0.507**	
		(3.38)			(2.40)	
Block 1: Resource allocation						
Resource Allocation			0.096			0.070
			(0.25)			(0.19)
*Resource Allocation*Total Factor Productivity*			0.009			0.004
			(0.94)			(0.67)
*Resource Allocation*External Finance Dependence*			0.016			0.006
			(1.47)			(0.71)
*Resource Allocation*Growth Potential*			0.090*			0.093
			(1.72)			(1.59)
*Resource Allocation*ETC*			0.581*			0.040
			(1.84)			(0.81)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-0.449			-0.267
			(-0.55)			(-0.79)
*Financial Sector Marketization*Total Factor Productivity*			0.034*			0.010
			(1.93)			(0.51)
*Financial Sector Marketization*External Finance Dependence*			0.041			0.022
			(1.53)			(0.95)
*Financial Sector Marketization*Growth Potential*			0.203**			0.198*
			(2.26)			(1.89)
*Financial Sector Marketization*ETC*			1.153***			0.543*
			(2.95)			(1.77)
Block 3: Legal environment						
Legal Environment			1.225			0.188
			(1.43)			(0.86)
*Legal Environment*Total Factor Productivity*			-0.016			-0.011
			(-1.23)			(-0.91)
*Legal Environment*External Finance Dependence*			0.021			-0.016
			(1.40)			(-0.45)
*Legal Environment*Growth Potential*			-0.060			-0.076
			(-0.84)			(-0.38)
*Legal Environment*ETC*			-0.368			0.413
			(-0.78)			(1.59)
P-value of Block 1 coefficients joint F-test			0.079			0.479
P-value of Block 2 coefficients joint F-test			0.009			0.094
P-value of Block 3 coefficients joint F-test			0.432			0.452
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	20.99%	29.14%	0.3259	17.03%	20.34%	22.17%

Table VII

Regression Analyses on Firm-Level Cumulative Abnormal Returns

Regressions explain 3-day (Panel A) and 5-day (Panel B) cumulative abnormal return. Explanatory variables are interactions of *Entertainment And Travel Costs* (*ETC*), *Total Factor Productivity*, *External Finance Dependence*, and *Growth Potential* with either the market reform index (*Marketization*), or its subindexes (*Resource Allocation*, *Financial Sector Marketization*, and *Legal Environment*). Regressions include main effects for the index (or subindexes), *ETC*, and *Total Factor Productivity* (industry fixed effects subsume *External Finance Dependence* and *Growth Potential* main effects); provincial *GDP Growth*, Log(*per capita GDP*) and *Education Spending/GDP*; and firm-level controls (*Firm Size*, *Leverage*, and *R&D*). Appendix III presents detailed definitions of all variables. T statistics are in parentheses. Significance at 10%, 5% and 1% levels indicated by *, **, and ***, respectively.

Panel A: Explained variable is 3-day cumulative abnormal return *CAR*(-1,1)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(3)	(4)	(6)
ETC	-2.04***	-9.98***	-11.6***	0.041	-0.456	-0.221
	(-3.19)	(-3.41)	(-3.32)	(0.28)	(-0.96)	(-0.20)
Total Factor Productivity	0.041*	0.002	0.002	0.029	0.020	0.020
	(1.87)	(0.47)	(0.44)	(1.21)	(0.89)	(0.83)
GDP Growth	0.053	0.054	0.049	0.032	0.033	0.030
	(1.50)	(1.59)	(1.55)	(0.93)	(0.91)	(0.87)
Log(*GDP per capita*)	0.146	0.157	0.157	0.010	0.058	0.052
	(0.38)	(0.32)	(0.28)	(0.05)	(0.14)	(0.13)
Education Spending/GDP	0.203	0.232	0.218	0.054	0.069	0.063
	(0.93)	(1.15)	(1.13)	(0.40)	(0.40)	(0.35)
Marketization	0.578***	0.023		0.163*	-0.017	
	(3.51)	(0.60)		(1.94)	(-0.21)	
*Marketization*Total Factor Productivity*		0.021**			0.008	
		(1.97)			(0.90)	
*Marketization*External Finance Dependence*		0.024**			-0.007	
		(2.02)			(-0.58)	
*Marketization*Growth Potential*		0.248*			0.186*	
		(1.69)			(1.90)	
*Marketization*ETC*		1.518**			0.448*	
		(2.13)			(1.82)	
Block 1: Resource allocation						
Resource Allocation			-0.058			0.048
			(-0.25)			(0.96)
*Resource Allocation*Total Factor Productivity*			0.011			0.002
			(1.47)			(0.51)
*Resource Allocation*External Finance Dependence*			0.019*			0.001
			(1.83)			(0.13)
*Resource Allocation*Growth Potential*			0.141*			0.169
			(1.70)			(0.73)
*Resource Allocation*ETC*			0.823**			0.201
			(2.49)			(1.33)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-0.177			-0.026
			(-0.61)			(-0.36)
*Financial Sector Marketization**Total factor productivity			0.030*			0.009
			(1.85)			(0.53)
*Financial Sector Marketization*External Finance Dependence*			0.026			0.030
			(1.15)			(0.95)
*Financial Sector Marketization*Growth Potential*			0.599*			0.310*
			(1.92)			(1.83)
*Financial Sector Marketization*ETC*			2.949***			0.952*
			(2.77)			(1.95)
Block 3: Legal environment						
Legal Environment			0.595			0.240
			(1.15)			(0.96)
*Legal Environment**Total factor productivity			-0.011			-0.001
			(-0.78)			(-0.14)
*Legal Environment*External Finance Dependence*			0.027*			-0.021
			(1.91)			(-1.03)
*Legal Environment*Growth Potential*			-0.091			-0.032
			(-0.95)			(-0.37)
*Legal Environment*ETC*			-0.745			0.259
			(-1.43)			(1.61)
P-value of Block 1 coefficients joint F-test			0.023			0.412
P-value of Block 2 coefficients joint F-test			0.013			0.087
P-value of Block 3 coefficients joint F-test			0.204			0.401
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	22.17%	29.29%	33.79%	18.56%	20.26%	21.79%

Panel B: Explained variable is 5-day cumulative abnormal return *CAR*(-2,2)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(3)	(4)	(6)
ETC	-2.113***	-9.486***	-11.2***	0.144	-0.532	-0.402
	(-3.42)	(-3.21)	(-3.06)	(0.99)	(-0.98)	(-0.31)
Total Factor Productivity	0.035**	0.005	0.005	0.031	0.029	0.027
	(2.01)	(0.81)	(0.76)	(1.05)	(0.36)	(0.32)
GDP Growth	0.070	0.085*	0.083*	0.049	0.054	0.050
	(1.63)	(1.73)	(1.67)	(1.43)	(1.49)	(1.45)
Log(*GDP per capita*)	0.803	0.784	0.721	0.093	0.184	0.175
	(1.43)	(1.61)	(1.52)	(0.24)	(0.38)	(0.35)
Education Spending/GDP	0.203	0.328*	0.312*	0.070	0.075	0.070
	(1.14)	(1.85)	(1.85)	(0.55)	(0.64)	(0.59)
Marketization	0.460***	0.035		0.251**	-0.421	
	(3.15)	(0.11)		(2.07)	(-1.01)	
*Marketization*Total Factor Productivity*		0.023**			0.009	
		(2.29)			(0.92)	
*Marketization*External Finance Dependence*		0.020*			-0.019	
		(1.81)			(-0.96)	
*Marketization*Growth Potential*		0.121			0.196*	
		(1.53)			(1.92)	
*Marketization*ETC*		1.449**			0.482**	
		(2.07)			(2.03)	
Block 1: Resource allocation						
Resource Allocation			-0.028			0.050
			(-0.10)			(1.00)
*Resource Allocation*Total Factor Productivity*			0.013*			0.005
			(1.77)			(0.79)
*Resource Allocation*External Finance Dependence*			0.013			0.005
			(1.51)			(0.38)
*Resource Allocation*Growth Potential*			0.090			0.185
			(1.25)			(0.99)
*Resource Allocation*ETC*			0.688*			0.332*
			(1.88)			(1.87)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-0.270			-0.147
			(-0.79)			(-1.01)
*Financial Sector Marketization*Total Factor Productivity*			0.034*			0.012
			(1.93)			(0.63)
*Financial Sector Marketization*External Finance Dependence*			0.018			0.011
			(0.88)			(0.23)
*Financial Sector Marketization*Growth Potential*			0.466*			0.404**
			(1.88)			(2.45)
*Financial Sector Marketization*ETC*			2.392**			0.739
			(2.49)			(1.62)
Block 3: Legal environment						
Legal Environment			0.681			0.209
			(1.37)			(0.86)
*Legal Environment*Total Factor Productivity*			-0.016			-0.010
			(-0.89)			(-0.84)
*Legal Environment*External Finance Dependence*			0.024*			-0.023
			(1.77)			(-1.14)
*Legal Environment*Growth Potential*			-0.051			-0.063
			(-0.32)			(-0.72)
*Legal Environment*ETC*			-0.485			0.241
			(-1.03)			(1.14)
P-value of Block 1 coefficients joint F-test			0.071			0.274
P-value of Block 2 coefficients joint F-test			0.019			0.096
P-value of Block 3 coefficients joint F-test			0.281			0.517
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	20.66%	25.82%	28.40%	14.54%	16.81%	17.31%

Table VIII
Change in Performance

Regressions explain firm-level performance change from 2012 to 2013, defined as increases in valuation (ΔQ), return on assets (ΔROA), and sales growth (ΔSG) in Panel A, B and C, respectively. Explanatory variables are interactions of entertainment and travel costs over sales (*ETC*), *Total Factor Productivity*, *External Finance Dependence*, and *Growth Potential* with either the market reform index (*Marketization*), or its three subindexes (*Resource Allocation*, *Financial Sector Marketization*, and *Legal Environment*). Regressions also include main effects for the index (or subindexes), *ETC*, and *Total Factor Productivity* (industry fixed-effects subsume the *External Finance Dependence* and *Growth Potential* main effects); provincial *GDP Growth*, log(*per capita GDP*) and *Education Spending/GDP*; and firm-level controls (*Firm Size*, *Leverage*, and *R&D*). Appendix III provides detailed descriptions of each variable. Significance at the 10%, 5%, and 1% level is indicated by *, **, and ***, respectively.

Panel A: Explained variable is change in firm value (ΔQ)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(4)	(5)	(6)
ETC	-0.348**	-1.83***	-2.06***	0.091**	0.273	0.122
	(-2.04)	(-2.58)	(-2.63)	(2.01)	(0.91)	(0.70)
Total Factor Productivity	0.013	-0.017	-0.016	0.016	-0.028	-0.024
	(1.25)	(-1.09)	(-1.07)	(1.13)	(-1.18)	(-1.01)
GDP Growth	0.085*	0.090*	0.084	-0.007	-0.009	-0.008
	(1.71)	(1.69)	(1.60)	(-0.28)	(-0.30)	(-0.15)
Log(*GDP per capita*)	0.450*	0.393	0.342	0.005	0.045	0.042
	(1.74)	(1.46)	(1.33)	(0.01)	(0.15)	(0.00)
Education Spending/GDP	0.181*	0.175*	0.161*	0.048	0.037	0.035
	(1.84)	(1.82)	(1.75)	(0.36)	(0.19)	(0.10)
Marketization	0.195***	0.016		0.045	0.011	
	(3.59)	(0.06)		(1.02)	(0.45)	
*Marketization*Total Factor Productivity*		0.006***			0.009**	
		(2.73)			(2.36)	
*Marketization*External Finance*		0.011*			0.006	
Dependence		(1.69)			(0.81)	
*Marketization*Growth Potential*		0.091			0.006	
		(0.97)			(0.05)	
*Marketization*ETC*		0.266**			1.078*	
		(2.29)			(1.72)	
Block 1: Resource allocation						
Resource Allocation			0.078			0.076
			(1.35)			(1.40)
*Resource Allocation*Total Factor*			0.003			0.002
Productivity			(1.39)			(0.70)
*Resource Allocation*External Finance*			0.002			0.003
Dependence			(0.37)			(0.28)
*Resource Allocation*Growth Potential*			0.054			0.066
			(1.43)			(0.21)
*Resource Allocation*ETC*			0.129*			0.018
			(1.78)			(0.93)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-0.065			-0.051
			(-0.58)			(-0.64)
*Financial Sector Marketization*Total*			0.015**			0.016*
Factor Productivity			(2.29)			(1.96)
*Financial Sector Marketization*External*			0.020*			0.010
Finance Dependence			(1.71)			(1.57)
*Financial Sector Marketization*Growth*			0.220*			0.501
Potential			(1.83)			(1.64)
*Financial Sector Marketization*ETC*			0.347**			0.149*
			(2.43)			(1.80)
Block 3: Legal environment						
Legal Environment			0.125			0.106
			(1.11)			(0.80)
*Legal Environment*Total Factor*			0.001			-0.004
Productivity			(0.25)			(-0.78)
*Legal Environment*External Finance*			0.015			0.003
Dependence			(1.54)			(0.15)
*Legal Environment*Growth Potential*			-0.172			-0.170
			(-1.40)			(-0.88)
*Legal Environment*ETC*			0.077			0.068*
			(0.82)			(1.91)
P-value of Block 1 coefficients joint F-test			0.151			0.613
P-value of Block 2 coefficients joint F-test			0.008			0.053
P-value of Block 3 coefficients joint F-test			0.325			0.211
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	18.56%	20.93%	23.79%	9.57%	11.22%	13.98%

Panel B: Explained variable is change in return on assets (*ΔROA*)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(4)	(5)	(6)
ETC	-0.238**	-4.107***	-4.522**	0.076	-0.075	-0.081
	(-2.14)	(-2.67)	(-2.52)	(0.58)	(-1.00)	(-1.14)
Total Factor Productivity	0.066	-0.106	-0.104	0.101	-0.119	-0.112
	(1.51)	(-1.06)	(-1.00)	(1.51)	(-1.17)	(-1.16)
GDP Growth	0.164	0.171	0.141	-0.048	-0.037	-0.032
	(1.48)	(1.45)	(1.33)	(-0.59)	(-0.46)	(-0.33)
Log(*GDP per capita*)	-0.229	-0.177	-0.149	-0.781	-0.723	-0.706
	(-0.44)	(-0.39)	(-0.36)	(-1.50)	(-1.37)	(-1.30)
Education Spending/GDP	0.231	0.152	0.147	0.012	0.011	0.011
	(1.05)	(0.70)	(0.51)	(0.34)	(0.34)	(0.30)
Marketization	0.307**	0.092		0.239*	0.047	
	(2.33)	(0.77)		(1.80)	(0.86)	
*Marketization*Total Factor Productivity*		0.019**			0.032***	
		(2.01)			(3.43)	
*Marketization*External Finance Dependence*		0.047***			0.020	
		(2.94)			(1.16)	
*Marketization*Growth Potential*		0.122			0.403	
		(1.40)			(1.34)	
*Marketization*ETC*		0.537***			0.112**	
		(2.73)			(2.34)	
Block 1: Resource allocation						
Resource Allocation			0.059			0.143
			(0.30)			(1.30)
*Resource Allocation*Total Factor Productivity*			0.009			0.002
			(0.93)			(0.30)
*Resource Allocation*External Finance Dependence*			0.021*			0.001
			(1.93)			(0.07)
*Resource Allocation*Growth Potential*			0.076			0.123
			(0.80)			(0.88)
*Resource Allocation*ETC*			0.289**			0.022
			(2.32)			(0.47)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-0.089			-0.052
			(-0.43)			(-0.80)
*Financial Sector Marketization*Total Factor Productivity*			0.039**			0.059**
			(2.47)			(2.41)
*Financial Sector Marketization*External Finance Dependence*			0.064*			0.060
			(1.77)			(1.52)
*Financial Sector Marketization*Growth Potential*			0.201			0.667
			(1.52)			(1.54)
*Financial Sector Marketization*ETC*			0.686*			0.193**
			(1.86)			(2.48)
Block 3: Legal environment						
Legal Environment			-0.031			0.085
			(-0.05)			(0.96)
*Legal Environment*Total Factor Productivity*			0.018*			0.020*
			(1.88)			(1.68)
*Legal Environment*External Finance Dependence*			0.022*			0.016
			(1.91)			(1.59)
*Legal Environment*Growth Potential*			-0.085			-0.108
			(-0.77)			(-1.21)
*Legal Environment*ETC*			0.150			0.059
			(1.44)			(0.60)
P-value of Block 1 coefficients joint F-test			0.056			0.822
P-value of Block 2 coefficients joint F-test			0.012			0.015
P-value of Block 3 coefficients joint F-test			0.061			0.211
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	18.83%	20.46%	23.89%	19.14%	21.91%	25.60%

Panel C: Explained variable is change in sales growth (*ΔSG*)

Subsamples	nonSOEs			SOEs		
	(1)	(2)	(3)	(4)	(5)	(6)
ETC	-14.89***	-66.28***	-75.1***	1.067	-10.470	-12.86
	(-4.64)	(-3.02)	(-3.24)	(0.71)	(-1.38)	(-1.37)
Total Factor Productivity	0.307	-0.690	-0.631	0.490	-1.046	-0.893
	(1.00)	(-1.26)	(-1.14)	(1.23)	(-1.34)	(-1.25)
GDP Growth	0.071	0.182	0.175	-0.032	-0.025	-0.025
	(0.11)	(0.29)	(0.28)	(-0.05)	(-0.07)	(-0.07)
Log(*GDP per capita*)	-4.517	-4.517	-4.464	-5.513	-4.530	-4.066
	(-0.66)	(-0.67)	(-0.62)	(-0.78)	(-0.69)	(-0.56)
Education Spending/GDP	4.073**	4.561**	4.093**	3.502	2.918	2.746
	(2.07)	(2.29)	(2.15)	(1.31)	(1.00)	(0.97)
Marketization	4.454***	1.052		5.501***	1.309	
	(2.95)	(1.00)		(3.18)	(1.09)	
*Marketization*Total Factor Productivity*		0.153**			0.190**	
		(2.27)			(2.15)	
*Marketization*External Finance Dependence*		0.407*			0.384	
		(1.88)			(0.98)	
*Marketization*Growth Potential*		4.858*			3.665*	
		(1.80)			(1.77)	
*Marketization*ETC*		8.110***			1.961**	
		(3.34)			(2.06)	
Block 1: Resource allocation						
Resource Allocation			0.994			0.844
			(0.74)			(0.67)
*Resource Allocation*Total Factor Productivity*			0.110			0.102
			(1.42)			(1.33)
*Resource Allocation*External Finance Dependence*			0.263***			0.283**
			(2.88)			(2.55)
*Resource Allocation*Growth Potential*			2.038			1.326
			(1.08)			(0.76)
*Resource Allocation*ETC*			3.795			0.613
			(1.40)			(0.73)
Block 2: Financial Sector *Marketization*						
Financial Sector Marketization			-2.706			-1.850
			(-0.28)			(-0.11)
*Financial Sector Marketization*Total Factor Productivity*			0.292			0.275
			(1.52)			(1.29)
*Financial Sector Marketization*External Finance Dependence*			0.777**			0.561
			(1.99)			(1.35)
*Financial Sector Marketization*Growth Potential*			7.184*			6.317*
			(1.92)			(1.84)
*Financial Sector Marketization*ETC*			14.559**			3.547*
			(2.25)			(1.82)
Block 3: Legal environment						
Legal Environment			2.150			3.688
			(0.92)			(1.36)
*Legal Environment*Total Factor Productivity*			0.116			0.282*
			(1.62)			(1.89)
*Legal Environment*External Finance Dependence*			-0.296			0.120
			(-0.95)			(0.60)
*Legal Environment*Growth Potential*			-2.415			-1.640
			(-1.04)			(-1.15)
*Legal Environment*ETC*			4.574*			1.005
			(1.91)			(0.76)
P-value of Block 1 coefficients joint F-test			0.063			0.097
P-value of Block 2 coefficients joint F-test			0.012			0.059
P-value of Block 3 coefficients joint F-test			0.194			0.199
Controls & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Two-way clustering by	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov	Ind, Prov
Observations	1228	1228	1228	1015	1015	1015
Adjusted R-squared	19.33%	20.93%	22.49%	17.71%	19.06%	22.18%

Appendix I
Summary Statistics for the Analysis of Province Level Portfolio Cumulative Returns

Variables	N	Mean	Std.	Q1	Q2	Q3
CRR(-1, 1), %	31	2.26	0.50	2.09	2.31	2.62
CRR (-2, 2), %	31	3.43	0.63	2.93	3.51	3.91
CAR(-1, 1), %	31	0.02	0.52	-0.21	0.03	0.23
CAR (-2, 2), %	31	0.03	0.71	-0.39	0.02	0.37
GDP Growth, %	31	11.78	1.76	11.24	11.79	12.93
Log(*GDP per capita*)	31	10.49	0.44	10.17	10.41	10.83
Education Spending/GDP, %	31	3.96	2.17	2.66	3.18	4.90
Marketization	31	7.34	2.39	6.06	7.39	8.93
Resource Allocation	31	5.22	5.97	4.28	6.45	8.45
Financial Sector Marketization	31	10.07	1.45	9.61	10.28	10.75
Legal Environment	31	7.91	4.85	5.25	6.00	8.30

Appendix II
Summary Statistics for the Analysis of Firm-level Cumulative Returns

Samples	Full		nonSOEs		SOEs	
N	2243		1228		1015	
	Mean	Std.	Mean	Std.	Mean	Std.
CRR(-1, 1), %	2.30	3.37	1.52	3.40	3.17	3.04
CRR(-2, 2), %	3.48	3.87	2.76	3.19	4.23	3.94
CAR(-1, 1), %	0.19	3.00	-0.51	2.98	0.47	3.17
CAR(-2, 2), %	0.32	3.98	-0.70	3.87	0.67	4.08
ETC, %	0.64	1.17	0.71	1.15	0.54	1.24
Marketization	9.22	2.02	9.50	1.96	8.88	2.05
Resource Allocation	7.58	2.81	7.85	2.88	7.26	2.70
Financial Sector Marketization	10.97	1.16	11.14	1.14	10.78	1.15
Legal Environment	12.20	5.68	12.81	5.69	11.46	5.59
Firm Size Log(total assets)	21.83	1.49	21.66	1.31	22.03	1.65
Leverage Liabilites/total assets	0.47	0.57	0.45	0.67	0.50	0.42
Research and Development (R&D/sales)	0.01	0.03	0.02	0.03	0.01	0.03
Total Factor Productivity	4.16	5.71	4.44	5.73	3.82	5.29
GDP Growth, %	10.51	1.97	10.35	1.87	11.70	2.07
Log(*GDP per capita*)	10.75	0.40	10.79	0.38	10.71	0.43
Education Spending/GDP, %	2.95	1.10	2.83	1.06	3.10	1.15
External Finance Dependence	-0.87	3.79	-0.71	3.61	-1.05	4.00
Growth Potential	1.55	0.25	1.55	0.25	1.54	0.26
Δ*Q*	-0.32	1.51	-0.28	1.39	-0.37	1.66
Δ*ROA*, %	-0.33	5.60	-0.30	5.43	-0.36	5.84
Δ*SG*, %	3.77	66.30	3.09	57.03	4.73	77.58

Appendix III

Variable Descriptions

Variables	Description
ETC, %	Entertainment and travel costs scaled by annual sales
CRR(-1,1), %	3-day cumulative stock raw returns around the passage of the Eight-point Policy on Dec 4th 2102.
CRR(-2,2), %	5-day cumulative stock raw returns around the passage of the Eight-point Policy.
CAR(-1,1), %	3-day cumulative stock abnormal returns around the passage of the Eight-point Policy using the market model, with parameters estimated over the period from day -210 to -11 (day 0 is the event day) with the value-weighted return as the market return.
CAR(-2,2), %	5-day cumulative stock raw abnormal around the passage of the Eight-point Policy using the market model, with parameters estimated over the period from day -210 to -11 (day 0 is the event day) with the value-weighted return as the market return.
Δ*Q*	The average of daily market-to-book ratio (M/B) in 2012, the year after the passage of the Eight-point Policy, minus the average of daily M/B in 2012. Daily M/B is defined as: (daily closing price * total shares outstanding)/total book equity in the year.
Δ*SG*, %	Change in sales growth, defined as (total sales in 2013 minus total sales in 2012)/total sales in 2012.
Δ*ROA*, %	The change of return on assets, defined as return on assets for 2013 minus return on assets for 2012. Return on assets is defined as operating income before depreciation and amortization/total assets.
SOEs	Indicator variable set to one if the firm is ultimately controlled by the state and to zero otherwise, using a 30% "weakest link in the control chain" threshold as per CSMAR (China Stock Market and Accounting Research) and CSRC (China Securities Regulatory Commission) guidelines.
Marketization	A summery index measuring the relative progress in market reforms by each of China's province-level jurisdictions (provinces, province-level cities, and autonomous regions). The higher the index, the more complete the province's market reforms. Source: Fan et al (2011).
Resource Allocation	A subindex measuring the extent to which resource allocation is effected by the private-sector, defined as government budgetary expenses as a fraction of provincial GDP. The higher the subindex the greater the market's role in resource allocation. Source: Fan et al (2011).
Financial Sector Marketization	A subindex measuring nonSOEs' access to capital. A function of deposits in nonSOE financial institutions and the share of all bank loans to nonSOEs, the subindex is higher where nonSOEs have greater access to capital. Source: Fan et al (2011).
Legal Environment	A subindex measuring courts' efficiency in resolving legal cases, based on 4000 company leaders' judgments collected from enterprise surveys. The higher the subindex, the more efficient the provinces' judicial system. Source: Fan et al (2011).
Firm Size	The logarithm of total assets.
Leverage	Total liabilities over total assets.
Research & Development	R&D expenses over total sales.
Total Factor Productivity (*TFP*)	Total factor productivity, estimated separately for each firm using the methodology developed by Levinsohn-Petrin (2003).
GDP Growth, %	Province's real GDP growth, averaged over 2009 to 2011.
Log(*GDP per capita*)	Log of province's real GDP *per capita*, averaged over 2009 to 2011.
Education Spending / *GDP*, %	Province's education expenditures over GDP, averaged over 2009 to 2011.
External Finance Dependence (EFD)	Industry median of capital expenditures less cash flow from operations, all divided by capital expenditures, all using 2011 data.
Growth Potential (Q)	Industry median market equity value over book equity, using 2011 data.

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