The Effect of Tournament Incentives on Financial Restatements: Evidence From China

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A R T I C L E   I N F O

A B S T R A C T

In this study, we examine the association between tournament incentives and financial restatements in China. Prior research documents that tournament incentives have a positive impact on firm performance. However, an alternative view suggests that tournament incentives can also have detrimental effects on firm performance. Using a sample of Chinese listed companies for the years 2008–2015, we find that tournament incentives, in the form of large pay disparities, reduce the occurrence of both core and non-core financial restatements. This negative association is more pronounced for SOEs as compared to non-SOEs. We further document that the negative association between tournament incentives and financial restatements is related to CEO turnover, and is stronger if the successor CEO is recruited from within the organization. This research contributes to a better understanding of tournament incentives, as a corporate governance mechanism, in constraining the occurrence of financial restatements in a unique institutional setting where state ownership is pronounced.

1. Introduction

This paper examines the impact of tournament incentives on the occurrence of financial restatements in China. The separation of ownership and control gives rise to information asymmetries that managers may use to exploit outside individual shareholders (Berle & Means, 1991; Jensen & Meckling, 1976). To minimize such sub-optimal managerial actions, researchers have identified a number of pure market forces, such as product market competition (Alchian, 1950; Stigler, 1958), the market for corporate control (Manne, 1965), and labor market pressure (Fama, 1980). However, despite these market controls, there remains residual demand for additional governance measures, such as well-designed managerial compensation schemes: an explicit form of compensation. A substantial body of academic research has investigated the association between this form of compensation and firm performance in various countries (Aggarwal & Samwick, 2006; Baker, Jensen, & Murphy, 1988; Cheng & Firth, 2006; Conyon & He, 2011; Jensen & Murphy, 1990; Kaplan, 1994; Kato & Long, 2006; Mengistae & Colin Xu, 2004; Tang & Sun, 2014; Xin & Tan, 2009).

However, an implicit compensation scheme in the form of rank-order tournaments also exists (Lazear & Rosen, 1981; Lin & Lu, 2009). Tournament theory views executives as competitors contesting for promotion, and the large pay gap between the CEO and other executives becomes the prize for the tournament (Bognanno, 2001; Eriksson, 1999; Kale, Reis, & Venkateswaran, 2009; Lazear & Rosen, 1981). A large pay disparity motivates non-CEO senior executives to work hard and to invest in firm-specific human capital and, thus, helps build a motivated pool of internal candidates for the CEO position. Such a pool of internal candidates increases the bargaining power of the board, thus fostering positive CEO actions. Therefore, this perspective predicts a positive association between

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pay disparity and firm performance (Kale etal., 2009), and a negative association between pay disparity and the cost of capital (Chen, Huang, & Wei, 2013).

On the other hand, the managerial power perspective (Bebchuk & Fried, 2003) suggests that a large pay disparity reflects CEO power and the probability of a CEO becoming entrenched. An entrenched CEO is associated with a more severe agency problem during his/her tenure (Bebchuk, Cremers, & Peyer, 2011). Therefore, a negative association between tournament incentives and firm performance has also been documented (Bebchuk etal., 2011; Henderson & Fredrickson, 2001). Tournament incentives also create incentives for senior managers to engage in earnings manipulation (Park, 2017) and, in extreme cases, in fraud (Haß, Müller, & Vergauwe, 2015). We argue that tournament incentives can have a constraining effect on managerial incentives for earnings manipulation that may have implications for subsequent financial restatements.

A restatement represents an acknowledgement by the firm of a material omission or misstatement in their financial statements (Palmrose & Scholz, 2004). Firms restating financial statements have suffered substantial losses in market values (Karpoff, Lee, & Martin, 2008; Palmrose, Richardson, & Scholz, 2004), increases in the cost of capital (Hribar & Jenkins, 2004), and high executive turnover (Hennes, Leone, & Miller, 2008; Srinivasan, 2005). Restatements call into question the credibility of future financial reports, because of a given firm's previously released low-quality financial information. Effective corporate governance has been argued to be a constraining factor for restatements, but the empirical evidence is far from conclusive (Agrawal & Chadha, 2005; Almer, Gramling, & Kaplan, 2008; Romanus, Maher, & Fleming, 2008). However, the association between tournament incentives, as a corporate governance mechanism, and financial restatements remains unexplored.

Financial restatements affect the likelihood of managerial promotion negatively. In the event of restatements, the probability of promotion for VPs will be low, since the shareholders as well as the investors will be skeptical about their capacity to maximize shareholder value (Kini & Williams, 2012). Moreover, drawing on the Neo-institutionalism in organizational theory, financial restatements could damage the company's legitimacy. Dismissal of the CEO is a commonly used tool for repairing and restoring damaged legitimacy (Arthaud-Day, Certo, Dalton, & Dalton, 2006). As a result, managers will be discouraged from taking actions that might subsequently cause restatements, if they believe that winning the tournament will give them a much higher return.

We test this association using data from China. As China is a growing economic power with high levels of government ownership, its corporate governance has often been criticized as ineffective and weak (Clarke, 2003; Lin & Lu, 2009; Liu, 2006). Executive compensation is a key internal mechanism that may lead to good corporate governance. A few studies have provided empirical evidence for a positive relationship between firm performance and compensation in Chinese listed companies, and for this relationship to be moderated by the level of government ownership (Chen, Ezzamel, & Cai, 2011; Kato & Long, 2006, 2011; Lin & Lu, 2009).

In the Chinese capital market, > 50% of Chinese listed companies are state-owned(Hass, Tarsalewska, & Zhan, 2016). The pronounced state influence over listed companies through their shareholding (i.e.,publicly listed SOEs) has important implications for the study of tournament incentives (Hass etal., 2016). Because of the pronounced state influence in the listed SOEs, the compensation gap in Chinese companies is also strongly influenced by the external political and regulatory environment (Conyon & He, 2011; Firth, Fung, & Rui, 2006a; Lin & Lu, 2009).

The 2014 "pay cap" policy enforced by the State-owned Assets Supervision and Administration Commission (SASAC) is intended to narrow the pay differences between the average compensation of executives and the average salary of the employees of SOEs from a ratio of 12:1 to a ratio of 7:1 or 8:1 (State Council, 2014). The executive compensation structure of Chinese listed SOEs has been criticized for being insensitive to firm performance, since their pay is primarily linked to political power. The political promotions within the government hierarchy are often accompanied by life-long benefits in the Chinese listed SOEs, including substantial housing subsidies, high levels of pension, fully subsidized medical treatment, and job security (Chen etal., 2011; Kato & Long, 2006). Prior literature documents evidence that the positive effect of tournament incentives on firm performance is dampened in the Chinese listed SOEs, owing to a high level of state ownership and the aforementioned executive compensation schemes (Chen etal., 2011; Kato & Long, 2011; Lin & Lu, 2009). Our study on the role of tournament incentives in constraining financial restatements for SOEs versus non-SOEs may have implications for "pay cap" policy. Moreover, the Chinese authorities have encouraged convergences with the International Financial Reporting Standards (IFRSs), including accounting standards related to executive compensation.[1] An investigation of the constraining effect of tournament incentives on the occurrence of financial restatements under the new Chinese accounting standards (2007 ASBEs)[2] would enrich the existing corporate governance literature in emerging economies.

We find that tournament incentives in the form of large pay disparities reduce the occurrence of financial restatements. We also consider the types of financial restatement: core restatements (related to balance sheet, income statement, and so forth) and non-core restatements (not related to financial statements). The reported results reveal that tournament incentives reduce the occurrence of both core as well as non-core restatements. We then test the association between tournament incentives and financial restatements for both SOEs and non-SOEs. The negative association is found to be stronger for SOEs than for their non-SOE counterparts. Given that tournament incentives have been found in prior research to be weaker for SOEs (e.g.,Chen etal., 2011; Kato & Long, 2011), this negative association is counterintuitive. One possible explanation may be the fact that executives in the listed SOEs might pursue non-cash incentives, such as political promotion, instead of cash incentives. Such political promotion often comes with very attractive life-long benefits (Chen etal., 2011; Kato & Long, 2006). The size of the tournament reflects the executives' administrative position in the

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[1] The Accounting Standards for Business Enterprises (ASBEs) which took effect from 1 January 2007 (2007 ASBEs) are mandatory for listed companies and cover nearly all of the topics under the current IFRSs. ASBE11 share-based payment converges with IFRS 2 in principle, although some differences still exist in the scope, measurement, and disclosure (Deloitte China, 2006).

[2] The ex-Chairman of IASB, Sir David Tweedie, said that "the adoption of the new Chinese accounting standards system bring about substantial convergence between Chinese standards and IFRSs, as set by the IASB" (Deloitte China, 2006, p.2).

political hierarchy, the scale of political promotion, and the political perks the executives could receive when they are promoted. We argue that financial restatements could impact the possibility of promotion for executives in SOEs adversely, thus encouraging SOE executives to provide financial statements of high quality.

We further examine the relationship between tournament incentives and financial restatements in the contexts of CEO turnover and successor appointments. The rationale for considering CEO turnover stems from the observation that the probability of promotion for incumbent top executives to a CEO position is weaker in the event of a new CEO replacing the incumbent CEO(Kale etal., 2009). Hence the tournament incentive for reducing restatements is expected to be more pronounced in a year without CEO turnover. Our results are consistent with this hypothesis. We also find this association to be stronger when the successor CEO is recruited from the internal pool of executives.

Our study makes a number of contributions. First, by investigating the tournament incentives effect on financial restatements, both core as well as non-core, we enrich the accounting restatement literature in a different institutional setting. Second, we contribute to the CEO turnover literature by documenting the moderating effects of CEO turnover on the association between tournament incentives and financial restatements. Third, our study adds to the corporate governance literature by documenting that different compensation structures in the SOE versus non-SOE companies have implications for compensation effects on financial restatements.

The rest of the paper is organized as follows. Section2 provides an overview of the executive compensation arrangement as embedded within the unique governance setting of China. Section3 reviews the literature on tournament incentives and develops hypotheses. Section4 describes the research design of this paper. The following Sectiondiscusses the main findings. Section6 concludes the paper.

2. Institutional environment and executive compensation in China

A growing body of research has investigated executive pay in the broader context of corporate governance. Unlike in the U.S., where long-term equity incentives in the form of stock options are a common compensation arrangement (Jensen & Meckling, 1976; Murphy, 1999), executive compensation in China consists mainly of cash compensation, with very few companies using long-term equity incentives (Huang & Boateng, 2017). Available Chinese evidence suggests that the compensation and firm performance relationship is moderated by corporate governance mechanisms, e.g.,state agency and legal entity shareholdings (Firth etal., 2006a; Firth, Fung, & Rui, 2006b, 2007; Kato & Long, 2011). Chen etal. (2011) document a positive relationship between executive compensation and an executive's political power in Chinese listed companies. Such findings imply that executive compensation may be perceived as a reward for political loyalty rather than for good corporate management.

The pay-for-performance link is not uniform across SOEs and non-SOEs in China. In general, there are three major classes of share ownership in Chinese listed companies. First, the state owns shares through its government agencies. Second, shares are owned by legal entities through either state controlled legal persons or privately controlled legal persons. Third, shares can be owned by individuals, institutions, and private businesses (Firth etal., 2006a). In China, > 50% of Chinese listed companies are state-owned (Hass etal., 2016). Despite the reform undertaken through the "split share reform" initiative,[3] the Chinese government continues to retain significant voting control (Conyon & He, 2011; Firth etal., 2006a). Such a distinct pattern of ownership and control structure has significant implications for executive compensation in China. Conyon and He (2011) find that executive pay and CEO incentives are lower in SOEs compared to their non-SOE counterparts. Hass etal. (2016) reveal that the positive association between the equity incentive component of executive compensation and corporate fraud is more pronounced in SOEs than in non-SOEs.

From a regulatory perspective, the Chinese Securities Regulatory Commission (CSRC) introduced equity incentives in their guideline[4] a decade ago. Before 2006, equity incentives were not permitted in China. The CSRC guidelines allowed the granting of stock options or restricted stocks to top management of the eligible companies[5](CSRC, 2005). Since 2006, listed companies have been required to report the total compensation (the sum of salary, bonus, stipends, and other benefits) of each individual board member and of top management (CSRC, 2005, 2016). In November 2014, the State-owned Assets Supervision and Administration Commission (SASAC)[6] of China enforced a new policy (that took effect from January 2015) of a pay cap on executives of SOEs. This policy is intended to narrow the pay differences between the average compensation of executives and the average salary of employees of SOEs from a ratio of 12:1 to a ratio of 7:1 or 8:1. The pay cap policy was first implemented on 72 selected SOEs in early 2015 (State Council, 2014).

The compensation gap between CEOs and other senior executives is an important compensation arrangement in China. Because of

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[3] A distinct feature that separated the Chinese stock market from those of other countries was the creation of a two-tier share structure consisting of non-tradable shares (NTS) and tradable shares (TS). The NTS held by state and legal persons effectively gave the government absolute control over the joint stock companies. Such a split-share structure arrangement has been argued to have created severe agency problems between the controlling (NTS holders) and minority shareholders because of the weak managerial incentives faced by NTS controlled firms to act in the best interest of the public shareholders (Wei & Geng, 2008). Considering this split-share structure as an obstacle to the efficient functioning of the Chinese capital market, the Chinese government initiated a split-share structure reform to convert publicly listed firms' NTS to TS. The reform allowed the NTS holders to sell and realize gains from stock price appreciation as for TS, albeit through a gradual process.

[4] An Equity Incentive Guideline for Listed Companies (Trial Version) was issued by the CSRC and took effect on 1 January 2006. This trial version, used for ten years, was replaced by the current official guideline, which took effect from 13 August 2016. The 2016 official guideline requires more detailed disclosure of the equity incentive plan, and provides detailed guidance on information disclosure (CSRC, 2005, 2016).

[5] In the 2005 guideline, listed companies were not eligible to issue equity incentives to top management if they (1)received a qualified opinion, adverse opinion, or disclaimer of opinion in the most recent annual audit, or (2)received an administrative penalty from the CSRC in the preceding one year, or (3)other conditions stipulated by the CSRC(CSRC, 2005).

[6] In a Chinese listed company with dominant state control, CEOs are appointed by the SASAC following recommendations from the Chairman and the Party Secretary (Chen etal., 2011).

the pronounced state influence in the listed SOEs, the compensation gap in Chinese companies is also strongly influenced by the external political environment (Conyon & He, 2011; Firth etal., 2006a; Lin & Lu, 2009). After a decade of economic reform since early 1980s, the Chinese SOEs started to provide annual compensation packages to their top management. As they increasingly adopted compensation contracts in rewarding the top management for better performance, the compensation gap widened, resulting in the emergence of tournament incentives. The magnitude of the pay gap in Chinese companies, however, is much smaller than that documented in Western companies (Chen etal., 2011). In the period 1999 to 2009, executive compensation in their sample companies increased by about 20% when the executive was promoted from level 2 (i.e.,Vice Presidents or Vice-Chief Managers) to level 1 (President or CEO) (Chen etal., 2011). In contrast, the executive remuneration increased by around 60% in the U.K. and 140% in the U.S., at the same level in the promotion ladder (Conyon, Peck, & Sadler, 2001; Main, O'Reilly III, & Wade, 1993). The executive pay (salary and bonus) in the U.S. is about 17 times more than in China, which indicates the level of executive pay in China has not yet caught up with the Western countries (Conyon & He, 2011). Conyon and He (2011) find the positive correlation between executive pay and firm performance is weaker in state controlled firms and firms with a concentrated ownership structure. Past literature has documented that the compensation gap among senior executives plays a tournament role, and tournament incentives motivate managers to perform better (Chen etal., 2011; Kato & Long, 2011; Lin & Lu, 2009).

However, the positive effect of tournament incentives on corporate performance is dampened in the Chinese listed SOEs owing to a high level of state ownership (Chen etal., 2011; Kato & Long, 2011; Lin & Lu, 2009). The compensation of executives in the Chinese listed SOEs has been criticized as being insensitive to firm performance, as their pay is linked to their individual political power.[7] The executive compensation plan for SOEs consists of four components: position salary, skill salary, market-based salary, and performance-related salary. The position salary is the key component, and is determined based on the executive's administrative/political position. The administrative/political position within the government hierarchy is often accompanied by life-long benefits, including substantial housing subsidies, high levels of pension, fully subsidized medical treatment, and job security (Chen etal., 2011; Kato & Long, 2006). These political perks are exclusively available to the executives in SOEs. Whether the effect of tournament incentives in reducing the occurrence of financial restatements is also moderated by listed companies' ownership structures, i.e.,SOEs versus non-SOEs, is addressed specifically by our empirical test.

3. Literature review and hypothesis development

The tournament incentive is an implicit method of stimulating executive performance (Lazear & Rosen, 1981; Lin & Lu, 2009). Executives are seen as contestants competing for promotion, and the tournament winner often receives much higher pay owing to the significant pay gap between the CEO and VPs (Eriksson, 1999; Lambert, Larcker, & Weigelt, 1993; Lazear & Rosen, 1981; Lin & Lu, 2009). When measuring and monitoring an individual's contribution to corporate performance is costly, the approach of paying executives based on rank order, rather than on their output level, can be an effective incentive structure (Chen etal., 2011; Lazear & Rosen, 1981; Milgrom & Roberts, 1992; Rosen, 1986). By promoting low-level executives to a higher position, the tournament incentive can stimulate executives to work hard for the firm. Previous studies have revealed a positive relationship between CEO pay disparity and firm performance (Chen etal., 2011; Eriksson, 1999; Henderson & Fredrickson, 2001; Kale etal., 2009; Lambert etal., 1993; Rosen, 1986).

However, an alternative view suggests that pay disparity between the CEO and other top executives also creates substantive and perceptual problems that can cause strategic errors and poor firm performance. Bloom and Michel (2002) find that CEO turnover is higher in firms with pay disparity, compared to their low-disparity counterparts. Detrimental effects of the tournament incentive have also been documented in high-technology firms, whereby large pay disparities diminish mutual collaboration and multi-level information processing: key ingredients for the success of these firms (Siegel & Hambrick, 2005). Research has also revealed a higher propensity for earnings manipulation (Park, 2017), a higher likelihood of committing fraud (Haß etal., 2015), a higher litigation threat (Shi, Connelly, & Hoskisson, 2017), and a greater extent of opportunistic pay increases in firms with a high CEO pay disparity (Vo & Canil, 2016).

We argue that tournament incentives can have a constraining effect on managerial incentives for earnings manipulation that may have implications for subsequent accounting restatements. Financial restatements affect the likelihood of managerial promotion negatively, and, at the extreme, companies restating their financial statements may terminate the CEO and/or other top management (TMT) members. Termination could be a response to shareholders' wealth losses due to restatements, as well as being seen as a quick remedial action for restoring financial reporting credibility (Farber, 2005; Hennes etal., 2008).

Innocent mistakes and intentional violations are the main causes of restatement occurrence, neither of which is favorable to managers in a rank-order tournament (Hennes etal., 2008). Both executive negligence and ability shortage can cause innocent mistakes. In a tournament contest, it is possible for every VP to be promoted to a higher position. However, in the event of restatements, the probability of promotion for VPs will be low since the shareholders, as well as the investors, will be skeptical about their capacity to maximize shareholder value. Hence, incumbent VPs will try to minimize innocent mistakes that could increase the probability of subsequent restatements (Kini & Williams, 2012). Therefore, we could argue that the tournament incentive is likely to have some constraining effect on the occurrence of financial misstatements. With respect to the managerial ability aspect related to financial restatements, Gomulya and Boeker (2014) argue that a "capacity" problem is a key reason for financial restatements. A

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[7] There have been many instances where the CEO and VPs of some SOEs continue to receive high salaries, despite the substantial losses suffered by listed SOEs. For example, Boliang Ma, the CEO of Zhongji Group, received 9.98 million CNY ($1.51 million USD) in 2012, despite the company's net profit shrinking by 47.76%. Three out of the six VPs in the same company received compensation of > 3.5 million CNY ($531,000 USD). For China Southern Airline, the total executive compensation increased by 49.8%, compared to the 2007 figure, despite the company suffering a net loss of −4.829 billion CNY.

tournament contest will reduce this problem to a great extent by motivating the pool of aspiring executives to improve operational efficiency. Operational efficiency improves firm performance and, thus, reduces the propensity for manipulating financial performance: a catalyst for subsequent restatements.

The organizational behavior aspect of studying financial restatements considers the relationship between managerial careers and financial restatements. Neo-institutionalism in organizational theory argues that companies should live in harmony with the external environment and comply with the principles of their institutional environment. This will legitimize corporate actions, and a beneficial interaction between companies and the external environment can be established (DiMaggio & Powell, 1983). In contrast, when this legitimacy is damaged, e.g.,because of financial restatements, among other reasons, the flow-in of external resources will be disturbed, and this will affect a corporate's daily operation negatively. Dismissal of the CEO is a commonly used tool for repairing and restoring damaged legitimacy. The dismissed managers become scapegoats after the issuance of a restatement (Arthaud-Day etal., 2006). Tournament incentives will stimulate managers to avoid restatement *ex ante* in order to retain their job *ex post*, since the costs of restatement likely outweigh the benefits derived from artificially inflating performance. The above reasoning suggests that managers will be discouraged from taking actions that might subsequently cause restatements if they believe that winning the tournament will give them a much higher return. Based on the preceding discussion, we develop the following hypothesis:

H1. Tournament incentives will reduce the likelihood of financial restatements.

As discussed in Section2, the relatively large proportion of listed SOEs is a unique feature of the Chinese capital market (Chen etal., 2011; Hass etal., 2016; Kato & Long, 2011). The pay-for-performance link for top executives has been found to be weaker in Chinese listed firms with a higher level of government ownership (Firth etal., 2006a; Kato & Long, 2006). Further in this vein, the compensation gap (a proxy of tournament incentives) has also been found to improve corporate performance, but this positive effect is dampened for SOEs (Chen etal., 2011; Kato & Long, 2011; Lin & Lu, 2009). This is because the pay gap between different levels of executive in SOEs is subject to government control (Conyon & He, 2011; Firth etal., 2006a; Lin & Lu, 2009). Hence, previous literature suggests that tournament incentives in listed SOEs in China are relatively weak, owing to strong government control. This, therefore, suggests that weaker tournament incentives through a smaller pay gap in SOEs may have less pronounced constraining effects on the occurrence of financial restatements. We develop the following hypothesis:

H2. The effect of tournament incentives on reducing the occurrence of financial restatements is less pronounced in SOEs than in non-SOEs.

We now consider the CEO turnover setting in order to formulate a further hypothesis on tournament incentives and financial restatements. Prior studies find that the possibility for incumbent VPs to be promoted to a CEO position is weaker (stronger) in the event of a CEO turnover (non-CEO turnover) (Kale etal., 2009). This is because when the firm has a newly appointed CEO, the incumbent VPs would perceive that their probability of winning the tournament in the turnover year is lowered. Hence, for a given pay gap, tournament effects on firm performance are found to be weaker in a CEO-turnover year. Therefore, the impact of tournament incentives in incentivizing executives to work hard will be greater in non-CEO-turnover years. Extending this line of argument, we propose that the negative association between tournament incentives and financial restatements will be stronger in non-turnover years. Hence we hypothesize the following:

H3a. The effect of tournament incentives on constraining the occurrence of financial restatements will be stronger (weaker) in years with non-CEO-turnover (CEO turnover).

We extend the above proposition by considering the scenario in which the successor CEO is an insider, as compared with the scenario in which the successor CEO is an outsider. Kale etal. (2009) find the effect of tournament incentives on firm performance (measured by *ROA*) is weaker when the successor CEO is an outsider. If the successor CEO comes from within the organization, this will imply to incumbent VPs that the next CEO may also be promoted internally. This will foster a positive work attitude among competing executives, and will reduce the propensity for earnings manipulation to artificially inflate profit and, hence, the likelihood of future restatements. Therefore we develop the following hypothesis:

H3b. The negative association between tournament incentives and financial restatements will be stronger if the incoming CEO is recruited from within the organization.

4. Research design

4.1. Sample selection

We collect financial statement data from the China Stock Market and Accounting Research (CMASR) and DIB internal control and risk management database, and tournament incentive data from the CSMAR personnel characteristics database. The observations are of "A" share[8] companies for the years 2008 to 2015. We begin in 2008 to avoid any financial restatements caused by poor application of the International Financial Reporting Standards (IFRS), which were adopted in 2006. Our initial sample consisted of 19,416 firm-

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[8] Tradable "A" shares are listed on the two major stock exchanges in Shanghai and Shenzhen to domestic investors, and are denominated in Renminbi (RMB). "B" shares are issued to overseas investors and are traded in either Hong Kong dollars or US dollars. The "H" share is for Chinese firms to trade on the Hong Kong Stock Exchange (Conyon & He, 2011).

Table 1

Sample distribution.

The table summarizes sample composition for our final sample, which covers observations from Chinese A share listed companies with available data during the 2008–2015 period.

Panel A

Year	Observations	Number of restatements	Ratio
2008	1439	258	17.93%
2009	1482	174	11.74%
2010	1757	175	9.96%
2011	2100	276	13.14%
2012	2324	441	18.98%
2013	2358	591	25.06%
2014	2459	510	20.74%
2015	2315	249	10.76%
Total	16,234	2674	16.47%

Panel B

Industry	Pooled sample			Matching sample		
	Observations	Number of restatements	% of observations	Observations	Number of restatements	% of observations
Farming, Forestry, Animal Husbandry, and Fishery	354	69	19.49%	138	69	50%
Mining and Quarrying	350	52	14.86%	100	50	50%
Food and Beverage	634	112	17.67%	224	112	50%
Textile, Clothing, Fur	613	103	16.80%	206	103	50%
Timber, Furniture Industry	81	11	13.58%	22	11	50%
Papermaking, Printing	330	47	14.24%	94	47	50%
Petroleum, Chemical, Rubber, Plastic	1802	341	18.92%	682	341	50%
Electronic	890	137	15.39%	274	137	50%
Metal, Non-metal	1396	252	18.05%	502	251	50%
Machinery, Equipment, Instrument	3057	519	16.98%	1034	517	50%
Medicine, Biologic Products	982	161	16.40%	322	161	50%
Other Manufacturing	216	38	17.59%	76	38	50%
Production and Supply of Power, Gas, and Water	537	72	13.41%	140	70	50%
Construction	344	69	20.06%	138	69	50%
Transportation, Storage	545	68	12.48%	136	68	50%
Information Technology Industry	1287	221	17.17%	442	221	50%
Wholesale and Retail Trades	867	121	13.96%	240	120	50%
Real Estate	726	90	12.40%	180	90	50%
Social Services	550	93	16.91%	186	93	50%
Transmitting, Culture Industry	192	30	15.63%	60	30	50%
Integrated	481	68	14.14%	136	68	50%
Total	16,234	2674	16.47%	5332	2666	50%

year observations. We then deleted 246 observations pertaining to observations in the financial sector, because of their different regulatory environment. We further deleted 2893 observations lacking necessary data to calculate the regression variables. Our final sample consists of 16,234 firm-year observations, of which 2674 firm-years restated their financial statements. The percentage of restatement observations varies from a low of 10% in 2010 to a high of 25% in 2013.

We also create a matched sample by selecting one non-restatement company for each financial restatement company from the same year, the same industry and the nearest size group. As shown in Table 2 Panel B, the t-test and Wilcoxon test for the variable SIZE are both insignificant. This indicates an insignificant difference in the size of restatement and non-restatement companies. Therefore we could argue that the size match is close, to the extent that the t-test and Wilcoxon test results are not significant for the sample and the matched sample in each industry. In the CSMAR database, each company is classified using an industry code. For instance, Farming, Forestry, Animal Husbandry, and Fishery is coded as A, according to the CRSC2001 classification. If a company (code 600251) is in a Farming, Forestry, Animal Husbandry, and Fishery industry, then it will be coded as A in the database. In the matching process, only companies with code A can be considered as a potential matching sample for company 600251. In Panel B, Table 1, the number of observations is described for each industry, and the restatements as a percentage of observations are tabulated for both pooled and matching samples. The proportion of restatement and non-restatement companies is about 50:50 (bold-faced columns). In addition, we also require that the matching company has the same ownership status as does the restatement firm. For example, if the restatement observation is an SOE, then the matching observation should also be an SOE. During the matching process, we find some non-restatement observations matching with more than one restatement observation requiring us to delete a total of 2666 matching pairs.

4.2. Regression model

We estimate the following logistic regression model to examine the association between tournament incentives and the probability of financial restatements:

$$Logit[RES/(1 - RES)] = a + b_1 Lngap/LnVPSTD + b_2 CONTL + b_3 SHARE1 + b_4 MANSHARE + b_5 COMPEN + b_6 INDE$$
$$+ b_7 LnBDSIZE + b_8 BIG4 + b_9 SIZE + b_{10} GROW + b_{11} ROA + b_{12} LEV + b_{13} ACCRUAL + b_{14} \sum IND$$
$$+ b_{15} \sum YEAR + u \tag{1}$$

where *RES* is an indicator variable set equal to 1 if the company restates its financial statements (includes core as well as non-core restatements) for a given period, and 0 otherwise. Our variables of primary interest are *LnGAP* and *LnVPSTD*, proxying for tournament incentives. Generally, the compensation gap between the CEO and the VPs (top executives) is used to measure the tournament incentive (Kale etal., 2009; Kini & Williams, 2012; Lazear & Rosen, 1981; Lin & Lu, 2009). However, in China, listed companies are not required to disclose the compensation paid to the CEO. Listed companies are required to report only the (i)total salary paid to the three highest paid executives and (ii) the total salary paid to all executives (Conyon & He, 2011; Lin & Lu, 2009). Executives are the President (CEO), Vice Presidents, Secretary to the Board, and other senior managers as reported in the annual reports, excluding independent directors and members of supervisory boards.

During the data collection procedure, we found that of the 16,234 firm-year observations (our final sample), 5177 observations did not provide CEO data (either the CEO's name is missing or the CEO's salary data is missing). This means 32% of our final sample does not have CEO data.[9] Therefore we could not measure the compensation gap between CEO and VPs in our study. Instead, we follow Liao, Liao, and Shen (2009) and Lin and Lu (2009), and define the compensation gap, *LnGAP*, as the difference between the mean of the top 3 executives' compensation and the mean of the remaining executives' compensation (Lin & Lu, 2009). Although the compensation gap should be positive, in some instances we found the average compensation of the top 3 executives to be lower than the average compensation of the remaining executives, resulting in a negative pay gap. However, only 43 observations in our sample had a negative pay gap and these were removed from the sample. The other tournament proxy, *LnVPSTD* is the standard deviation of the VPs' compensation excluding the CEO's compensation, which represents the compensation gap between individual VPs.

Prior literature on tournament incentives in the U.S. considered the entire compensation package, i.e.,salary, bonus, and stock options, in calculating the tournament incentives (Kale etal., 2009; Kini & Williams, 2012). However, we included only the cash salary and bonus components of the executive compensation, because (i)executives in most companies with central and/or local government ownership hold little stock, and (ii) it is a futile undertaking to try to calculate stock holding, given the inaccuracy of the option values. Our approach is also consistent with Liao etal. (2009), Xu (2012), and Zhang, Liu, and Qi (2013) on tournament incentives in China.

We include a set of control variables that reflect the corporate governance structure of the sample firms. Variables include ownership (*CONTL*), an indicator variable coded 1 if the firm is an SOE, and 0 otherwise; the percentage of independent directors on the board (*INDE*), calculated as the ratio of independent directors to total board size; board size (*LnBDSIZE*), defined as the natural logarithm of the number of board members; Big 4 auditor (*BIG4*), a dummy variable coded 1 if the firms employ a Big 4 audit firm, and 0 otherwise; equity shareholding of ultimate shareholders (*SHARE1*); executive stock holdings, which equals the total stock holdings of all executive members (*MANSHARE*); and executive compensation (*COMPEN*), calculated as the mean of the top 3 executives' compensation divided by the mean compensation of all personnel.[10] We further include some firm-level financial variables as potential determinants of financial restatements (see Almer etal., 2008; Beasley, 1996; He & Liu, 2010). Total accruals to sales (*ACCRUAL*) is calculated by using net income minus operating cash flows and divided by lagged assets; leverage (*LEV*) is total debt divided by total assets; firm size (*SIZE*) is calculated as the natural logarithm of total assets; profitability (*ROA*) is calculated as net income divided by total assets; and growth (*GROW*) is calculated as the growth ratio of revenue. We also include industry and year dummy variables in all our regression specifications. Variable definitions are in Appendix A.

5. Empirical analysis

5.1. Sample distribution and descriptive statistics

Panel A,Table 1, presents the yearly distribution of sample observations and the number of restating firms. There is a monotonic increase in the number of sample observations. However, the percentage of firms restating their financial statements varies from a low of 10% in 2010 to a high of 25% in 2013. Panel B reports the composition of the sample by the 21 industry groups. The sample is not evenly distributed across industries, with the largest sample being in the Machinery industries (n = 3057), followed by the Petroleum industries (n = 1802). Firms in the Construction industries have the highest percentage of restatements (20.06%), followed by firms in the Farming industries (19.49%).

Table 2 Panel A, reports descriptive statistics for the pooled restatement and non-restatement groups. The mean *LnGAP* is 12.87

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[9] Therefore, we did not exclude those 5177 observations without CEO data in our final sample, and our final sample remains as 16,234 firm-year observations.

[10] For the variable *Compensation,* we use relative rather than absolute form. Using the relative form of compensation controls for the increase in labor costs and wage levels over the past decade in China.

Table 2 Panel A

Descriptive statistics.

The table provides summary statistics for our final sample, which covers observations from Chinese A share listed companies with available data during the 2008–2015 period. Sample distribution is described in Table 1.

Panel A: Pooled sample

Variable	Restatement companies					Non-restatement companies					*t*-Test (non-restatement minus restatement group)	Wilcoxon test
	Mean	Median	St.d.	Min	Max	Mean	Median	St.d.	Min	Max		
RES	1	1	0	1	1	0	0	0	0	0		
LnGAP	12.74	12.78	0.872	6.215	15.66	12.87	12.91	0.870	6.032	16.67	7.056***	7.262***
LnVPSTD	12.43	12.45	0.787	7.424	14.99	12.56	12.60	0.810	6.194	15.98	7.838***	8.497***
CONTL	0.416	0	0.493	0	1	0.468	0	0.499	0	1	4.906***	4.903***
INDE	0.370	0.333	0.055	0.143	0.714	0.370	0.333	0.055	0.091	0.800	0.122	0.382
SHARE1	0.348	0.326	0.151	0.022	0.875	0.362	0.343	0.154	0.001	0.899	4.178***	4.108***
MANSHARE	0.054	0	0.134	0	0.884	0.042	0	0.116	0	0.923	− 4.521***	− 2.441**
COMPEN	6.528	5.027	6.201	0.035	140.13	7.116	5.304	6.995	0.017	116.38	4.049***	3.907***
LnBDSIZE	2.155	2.197	0.201	1.386	2.833	2.163	2.197	0.200	1.386	2.890	2.028**	1.792*
BIG4	0.033	0	0.178	0	1	0.058	0	0.234	0	1	5.395***	5.390***
ACCRUAL	− 0.0001	− 0.008	0.270	− 1.085	1.403	0.0007	− 0.008	0.258	− 1.085	1.403	0.147	0.458
GROW	0.465	0.109	1.768	− 0.732	14.14	0.382	0.085	1.495	− 0.733	14.14	− 2.528**	− 3.007***
ROA	0.034	0.034	0.058	− 0.229	0.208	0.041	0.039	0.052	− 0.230	0.209	6.122***	6.223***
LEV	0.465	0.463	0.239	0.042	1.262	0.456	0.450	0.229	0.042	1.262	− 1.871*	− 1.587
SIZE	21.71	21.58	1.198	19.08	25.87	21.88	21.73	1.286	19.08	25.87	6.364***	5.890***

Note: Variable definitions are in Appendix A.

  *** Statistical significance at the 1% level.

  * Statistical significance at the 10% level.

  ** Statistical significance at the 5% level.

for the non-restatement group compared to 12.74 for the restatement group. The difference is statistically significant (t-statistic 7.06, p < 0.01). This provides univariate support for H1 that tournament incentives in terms of a greater pay gap encourage executives to refrain from actions that might give rise to financial restatements ex-post. Although the difference in logged measures seems small, the actual mean Yuan value is 242,497.20 (281,189 Yuan) for the restatement (non-restatement group). This results in a difference of 38,692 Yuan.[11] The mean difference in *LnVPSTD* between the restatement and non-restatement group (168,867.20 versus 196,966.90 Yuan) translates into a mean difference of 28,099.7 Yuan. All the control variables except *INDE* and *ACCRUAL* are significantly different between the two groups. For example, smaller firms are more likely to restate their financial statements than larger firms. Similarly, firms audited by Big 4 audit firms are less likely to restate their financial statements (t-statistic − 5.39, p < 0.01).

Table 2 Panel B, provides the descriptive statistics for the matching sample. We match restatement firms with non-restatement firms based on firm size, industry, and year. An insignificant difference in the *SIZE* variable between these groups implies a good match. Besides this, we can see that there is no significant difference for the variables *SHARE1*, *COMPEN*, *LnBDSIZE*, and *Big4* between restatement companies and non-restatement ones in Panel B, which is in contrast to results in Panel A for the pooled sample. The tournament incentive variables *LnGAP* and *LnVPSTD* are both significantly different between these two groups, consistent with the pooled sample result. The t-stat for difference in mean in *LnGAP*, for these two groups is highly significant (t statistic 3.61, p < 0.01). Our inference remains unchanged for *LnVPSTD* (t statistic 3.75, p < 0.01).

Table 3 presents the correlation table. The correlation between the incentives variables and financial restatements are negative and significant (correlation coefficient of −0.06, p < 0.01). This provides univariate support for our prediction that pay disparity reduces the occurrence of financial restatements. Although many of the independent variables are strongly correlated, none causes any concern for multicollinearity, as the highest pairwise correlation is 0.56.

5.2. Regression results

Table 4 presents our main regression results for the effects of tournament incentives on financial restatements. We use a logistic regression specification, given the binary nature of our dependent variable. The coefficient on *LnGAP*, our first tournament incentive proxy, is negative and statistically highly significant in Column (1)(coefficient −0.14, p < 0.01). In terms of economic significance, the coefficient estimate of −0.14 means that a 1% change in *LnGAP* decreases the likelihood of financial restatements by 1.8%. In Column (2), we report the coefficient on *LnVPSTD*, our second proxy for tournament incentives. The coefficient is again negative and statistically highly significant (coefficient −0.16, p < 0.01). In terms of economic significance, the coefficient estimate of −0.16 means that a 1% change in *LnVPSTD* decreases the likelihood of financial restatements by 2%. These results are consistent with our prediction that tournament incentives will decrease the occurrence of financial restatements. Columns (3)and (4)present regression results for the matched sample, and reveal that the coefficients on *LnGAP* and *LnVPSTD* are negative and significant (coefficients of

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[11] 38,692 Yuan is equivalent to approximately 5692.60 U.S. dollars based on current exchange rate.

Table 2 Panel B
Descriptive statistics.

The table provides summary statistics for our final sample, which covers observations from Chinese A share listed companies with available data during the 2008–2015 period. Sample distribution is described in Table 1.

Panel B: Matching sample

Variable	Restatement companies					Non-restatement companies					*t*-Test	Wilcoxon test
	Mean	Median	St.d.	Min	Max	Mean	Median	St.d.	Min	Max		
RES	1	1	0	1	1	0	0	0	0	0		
LnGAP	12.65	12.70	0.905	7.307	15.66	12.76	12.79	0.861	8.495	16.43	3.609***	3.487***
LnVPSTD	12.32	12.36	0.927	0	14.99	12.43	12.46	0.773	9.484	15.26	3.751***	3.338***
CONTL	0.453	0	0.498	0	1	0.453	0	0.498	0	1	0	0
INDE	0.369	0.333	0.056	0.143	0.714	0.368	0.333	0.054	0.091	0.667	−0.876	−0.570
SHARE1	0.354	0.333	0.154	0.039	0.852	0.358	0.344	0.149	0.051	0.865	0.828	1.071
MANSHARE	0.054	0	0.134	0	0.843	0.054	0	0.131	0	0.791	−0.033	1.853*
COMPEN	6.688	4.988	6.895	0.035	140.13	6.887	5.151	6.748	0.042	110.87	0.821	1.383
LnBDSIZE	2.165	2.197	0.202	1.386	2.833	2.168	2.197	0.192	1.609	2.833	0.372	0.131
BIG4	0.038	0	0.191	0	1	0.039	0	0.195	0	1	0.2758	0.276
ACCRUAL	0.009	−0.001	0.279	−1.085	1.403	0.006	−0.002	0.275	−1.085	1.403	−0.3680	−0.076
GROW	0.515	0.119	1.863	−0.733	14.14	0.494	0.125	1.718	−0.733	14.14	−0.3324	0.363
ROA	0.031	0.032	0.064	−0.229	0.209	0.038	0.039	0.060	−0.229	0.209	2.7289***	3.905***
LEV	0.472	0.476	0.248	0.042	1.262	0.439	0.432	0.232	0.042	1.262	−3.8061***	−3.735***
SIZE	21.65	21.49	1.226	18.97	25.19	21.65	21.50	1.165	18.97	25.19	0.0783	0.148

Note: Variable definitions are in Appendix A.
*** Statistical significance at the 1% level.
* Statistical significance at the 10% level.

−0.15 and −0.17, p < 0.01). This result is consistent with the regression result from the pooled sample in columns (1)and (2). The consistently significant results from both the pooled and matched samples indicate that tournament incentives exert a negative effect on the occurrence of financial restatements. Hence H1 is supported.

Among the control variables, the coefficient on *BIG4* is negative and significant for the pooled sample (coefficients of −0.35 and −0.34 for both the *LnGAP* and the *LnVPSTD* measures), suggesting that the probability of financial restatements is lower for firms being audited by Big 4 audit firms than for firms audited by non-Big 4 auditors. Among other corporate governance variables, the coefficients of *CONTL* and *SHARE1* are negative and significant in both the *LnGAP* and the *LnVPSTD* specifications. This evidence suggests that the ownership structure and equity share of the ultimate shareholders have a negative impact on financial restatement. The coefficients on *COMPEN* and *MANSHARE* are insignificant, implying that the compensation and executive stockholding incentives do not affect financial restatements. The coefficients on *SIZE* and *ROA* are negative and significant while those on *GROW* and *LEV* are significantly positive. These results are generally consistent with the He and Liu (2010) study using a Chinese sample.

We also consider the effect of tournament incentives on different types of financial restatements. We label restatements related to balance sheet, income statement, and cash flow statement as core restatements, and the remaining restatements as non-core restatements. The results are reported in Table 5. In the core restatement sample, the coefficients on *LnGAP* and *LnVPSTD* are significantly negative in Columns (1)and (2)(coefficients of −0.15 and −0.17 respectively, p < 0.01). These results imply that tournament incentives can constrain subsequent core restatements. The coefficients on the tournament variables are also negative and significant for the non-core restatement groups as reported in Columns (3)and (4)(coefficients of −0.14 and −0.15 respectively, p < 0.01). Taken together, the reported results for the pooled sample suggest that tournament incentives exert a strong constraining effect on the occurrence of both core as well as non-core restatements. The negative and the significant coefficients on the two tournament variables are also evidenced for the matched sample for both the core and non-core restatement groups (Columns 5 to 8).

5.3. Tournament incentives and financial restatements: SOEs versus non-SOEs

As revealed in Table 4, the coefficient on *CONTL* is negative and significant. This result indicates that the ownership structure of our sample companies does have a negative impact on financial restatements. To further examine this impact, we classify our sample according to ownership structure, into SOEs and non-SOEs, and rerun regression Eq. (1). As shown in Table 6, the coefficients on both *LnGAP* and *LnVPSTD* are significant; the coefficient on *LnGAP* for SOEs is −0.20 (p < 0.01) while that for non-SOEs is −0.10 (p < 0.05). For *LnVPSTD* the coefficient for SOEs is −0.21 (p < 0.01) while that for non-SOEs is −0.09 (p < 0.10). When we compare the results between SOEs and non-SOES, it is obvious that the coefficients on *LnGAP* and *LnVPSTD* for the SOEs are more negative than are those for the non-SOEs. The difference in the coefficients between the SOE and non-SOE samples is statistically significant as well. This implies that tournament incentives in SOEs have a greater constraining effect on financial restatements than do tournament incentives in non-SOEs. This finding contradicts our hypothesis H2.

Previous studies have suggested that tournament incentives for executives are weaker in those Chinese listed firms with high state ownership (e.g.,Chen etal., 2011; Kato & Long, 2011). We argue that the unique compensation scheme for the SOE executives may provide an answer to this counterintuitive finding. The executives' compensation plan in SOEs includes a key component called

Table 3

Correlation analysis.

The table provides Spearman correlations for our final sample, which covers observations from Chinese A share listed companies with available data during the 2008–2015 period.

	RES	LnGAP	LnVPSTD	CONTL	INDE	BIG4	SHARE1	MANSHARE	COMPEN	ACCRUAL	LnBDSIZE	LEV	SIZE	ROA
RES	–													
LnGAP	−0.055	–												
LnVPSTD	−0.061	0.828	–											
CONTL	−0.038	0.006	0.060	–										
INDE	−0.001	0.008	0.008	−0.062	–									
BIG4	−0.033	0.058	0.077	0.195	0.052	–								
SHARE1	0.035	0.034	−0.050	−0.327	0.084	−0.029	–							
MANSHARE	−0.032	0.556	0.519	−0.054	−0.002	−0.042	−0.019**	–						
COMPEN	−0.016**	0.140	0.104	0.268	−0.439	0.024	−0.124	0.076	–					
ACCRUAL	−0.042	0.182	0.201	0.151	0.047	0.147	−0.073	0.121	0.112	–				
LnBDSIZE	−0.001	0.082	0.071	−0.093	0.021	0.031	0.072	0.033	−0.042	−0.033	–			
LEV	−0.048	0.261	0.252	−0.123	−0.015*	0.108	0.122	0.141	0.009	0.039	0.332	–		
SIZE	0.015*	−0.051	−0.01	0.289	−0.011	0.023	−0.281	0.031	0.132	0.082	−0.115	−0.382	–	
ROA	−0.050	0.369	0.423	0.353	0.033	0.284	−0.213	0.232	0.272	0.373	0.003	0.061	0.357	–
GROW	0.020**	−0.041	−0.027	−0.01	0.019**	0.022	−0.027	−0.037	−0.047	−0.033	0.119	0.021	0.067	−0.025

Note: Correlations statistically significant at the 1% level are bold-faced.

* Statistical significance at the 10% level.

** Statistical significance at the 5% level.

Table 4

Regressions for the effects of tournament incentives on financial restatements.

The model summarizes estimation results of Eq.(1), given below, for the 2008–2015 period for the pooled and matched samples. Robust t-statistics are in brackets. All variables are defined in Appendix A.

$$\text{Logit}[RES/(1-RES)] = a + b_1 LnGAP/LnVPSTD + b_2 CONTL + b_3 SHARE1 + b_4 MANSHARE$$
$$+ b_5 COMPEN + b_6 INDE + b_7 LnBDSIZE + b_8 BIG4 + b_9 SIZE \qquad (1)$$
$$+ b_{10} GROW + b_{11} ROA + b_{12} LEV + b_{13} ACCRUAL + b_{14} \sum IND + b_{15} \sum YEAR + u$$

	Pooled sample		Matched sample	
	(1)	(2)	(3)	(4)
LnGAP	−0.138***	–	−0.1515***	–
	[−3.78]		[−3.27]	
LnVPSTD	–	−0.1556***	–	−0.1677***
		[−3.90]		[−3.31]
CONTL	−0.1119*	−0.1044*	−0.0630	−0.0570
	[−1.90]	[−1.77]	[−0.85]	[−0.77]
INDE	−0.0501	−0.1113	0.7030	0.6412
	[−0.10]	[−0.22]	[1.05]	[0.96]
BIG4	−0.3489**	−0.3415**	−0.1324	−0.1165
	[−2.38]	[−2.33]	[−0.76]	[−0.66]
SHARE1	−0.3221*	−0.3275*	−0.4079*	−0.4215*
	[−1.79]	[−1.82]	[−1.84]	[−1.90]
MANSHARE	0.2612	0.1867	0.2097	0.1277
	[1.21]	[0.87]	[0.83]	[0.51]
COMPEN	0.0021	0.0016	0.0036	0.0026
	[0.41]	[0.31]	[0.58]	[0.42]
ACCRUAL	0.1181	0.1135	0.1871	0.1832
	[1.32]	[1.26]	[1.56]	[1.53]
LnBDSIZE	0.0967	0.0528	0.2674	0.2211
	[0.64]	[0.35]	[1.50]	[1.25]
SIZE	−0.0545**	−0.0486*	0.0133	0.0183
	[−1.99]	[−1.75]	[0.37]	[0.51]
GROW	0.0381***	0.0394***	0.0458**	0.0458**
	[2.78]	[2.90]	[2.33]	[2.35]
ROA	−1.2940***	−1.2637**	−0.9382	−0.8739
	[−2.58]	[−2.53]	[−1.46]	[−1.37]
LEV	0.3923***	0.3977***	0.5771***	0.5843***
	[3.14]	[3.18]	[3.53]	[3.57]
Constant	1.2519*	1.4050**	0.5400	0.7039
	[1.78]	[1.97]	[0.61]	[0.78]
Ind/year	Yes	Yes	Yes	Yes
P-R2	0.0343	0.0344	0.0089	0.0090
Wald-Chi(2)	438.18***	435.92***	55.48***	56.24***
N	16,234	16,234	5332	5332

*** p < 0.01.
** p < 0.05.
* p < 0.10.

"position salary," which is determined based on the executive's administrative/political position. The administrative position within the government hierarchy is often accompanied by life-long benefits, including substantial housing subsidies, high levels of pension, fully subsidized medical treatment, and job security (Chen etal., 2011; Kato & Long, 2006). These benefits are obviously very attractive to executives. The size of the tournament reflects the executive's administrative position in the political hierarchy, the scale of political promotion, and the political perks the executives could receive. The executives in SOEs enjoy exclusive political perks which are not available to their counterparts in the listed non-SOEs. These political perks are not easily quantifiable and are often insensitive to firm performance (Kato & Long, 2006). However, financial restatements could affect the likelihood of promotion negatively and, hence, the executives in SOEs will try to minimize their occurrence (Kini & Williams, 2012). Moreover, managerial capacity is another key reason for financial restatements (Gomulya & Boeker, 2014). It is commonly known that in China, private listed firms are inferior to SOEs in terms of their level of management, quality of employees, technology, and facilities (Naughton, 1996; Wu, 2003). Executives with superior managerial skills would be more capable of improving operational efficiency which, in turn, reduces the propensity to manipulate financial performance and, thus, the need for subsequent restatements.

5.4. The tournament incentive and financial restatement based on CEO turnover

In the preceding analyses we used pay gap to represent tournament incentive intensity and its impact on subsequent restatements. In this section we employ CEO turnover as a contextual variable to test H3a, i.e.,whether the association between tournament

Table 5

Regressions for the effects of tournament incentives on different types of restatements.

The model summarizes estimation results of Eq.(1) for the 2008–2015 period for the pooled and matched samples. Robust t-statistics are in brackets. All variables are defined in Appendix A.

	Pooled sample				Matched sample			
	Core restatement		Non-core restatement		Core restatement		Non-core restatement	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LnGAP	−0.1488**	–	−0.1376***	–	−0.2321**		−0.1287**	
	[−2.42]		[−3.33]		[−2.48]		[−2.42]	
LnVPSTD	–	−0.1718***	–	−0.1501***		−0.3282***		−0.1237**
		[−2.67]		[−3.31]		[−3.16]		[−2.17]
CONTL	−0.0988	−0.0928	−0.1103*	−0.1028	−0.0313	−0.0153	−0.0704	−0.0661
	[−0.97]	[−0.91]	[−1.65]	[−1.53]	[−0.22]	[−0.11]	[−0.84]	[−0.79]
INDE	0.4576	0.3881	−0.2018	−0.2616	2.0657	2.0815	0.3349	0.2709
	[0.51]	[0.43]	[−0.35]	[−0.46]	[1.60]	[1.61]	[0.46]	[0.37]
BIG4	−0.7078**	−0.6990**	−0.2428	−0.2366	−0.2661	−0.2307	−0.1074	−0.0988
	[−2.49]	[−2.46]	[−1.43]	[−1.40]	[−0.71]	[−0.61]	[−0.52]	[−0.48]
SHARE1	−0.6317**	−0.6354**	−0.2213	−0.2272	−0.8706**	−0.8617**	−0.2828	−0.2992
	[−2.01]	[−2.03]	[−1.10]	[−1.13]	[−2.04]	[−2.01]	[−1.15]	[−1.21]
MANSHARE	0.4985	0.4157	0.1833	0.1092	0.5762	0.4686	0.0994	0.0278
	[1.31]	[1.09]	[0.77]	[0.46]	[1.15]	[0.93]	[0.34]	[0.10]
COMPEN	0.0036	0.0034	0.0017	0.0008	0.0123	0.0165	0.0016	−0.0004
	[0.45]	[0.44]	[0.27]	[0.13]	[0.99]	[1.36]	[0.22]	[−0.06]
ACCRUAL	0.2014	0.1948	0.0798	0.0755	0.2351	0.2238	0.1669	0.1665
	[1.14]	[1.10]	[0.78]	[0.74]	[1.00]	[0.96]	[1.15]	[1.15]
LnBDSIZE	0.1147	0.0666	0.0882	0.0443	0.3897	0.3282	0.2293	0.1876
	[0.46]	[0.27]	[0.52]	[0.26]	[1.08]	[0.91]	[1.16]	[0.95]
SIZE	−0.0241	−0.0169	−0.0629**	−0.0575*	0.0445	0.0645	0.0065	0.0079
	[−0.53]	[−0.37]	[−2.04]	[−1.83]	[0.64]	[0.93]	[0.16]	[0.19]
GROW	0.0441*	0.0461**	0.0350**	0.0368**	0.0219	0.0193	0.0564**	0.0570**
	[1.94]	[2.04]	[2.19]	[2.31]	[0.67]	[0.59]	[2.31]	[2.36]
ROA	−1.2313	−1.2202	−1.2514**	−1.2224**	−0.3200	−0.2312	−1.1629	−1.1172
	[−1.35]	[−1.34]	[−2.17]	[−2.12]	[−0.28]	[−0.20]	[−1.47]	[−1.41]
LEV	0.7129***	0.7163***	0.2896**	0.2955**	0.9197***	0.9260***	0.4674**	0.4759**
	[3.45]	[3.49]	[1.99]	[2.02]	[2.91]	[2.96]	[2.39]	[2.43]
Constant	−0.6155	−0.4115	1.0687	1.1813	0.0359	0.7672	0.6489	0.6461
	[−0.54]	[−0.35]	[1.36]	[1.49]	[0.02]	[0.43]	[0.65]	[0.64]
Ind/year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
P-R2	0.0468	0.0470	0.0343	0.0343	0.0189	0.0213	0.0071	0.0069
Wald-Chi(2)	203.70***	204.92***	376.25***	371.79***	31.76***	35.18***	33.07***	32.86***
N	14,227	14,227	15,567	15,567	1328	1328	4004	4004

*** p < 0.01.
** p < 0.05.
* p < 0.10.

incentives and financial restatements is related to CEO turnover. The rationale for considering CEO turnover stems from the observation that the probability of promotion for a particular VP to a CEO position is weaker in the event of a new CEO replacing the incumbent CEO and, hence, tournament incentives fail to stimulate executives to work hard. For years without CEO turnover, it is possible for a VP to be the future CEO. In this situation, the tournament incentive is stronger than it is for years with CEO turnover.

Using available data, we classify firms into a CEO turnover sample and a non-CEO turnover sample. We then run Eq. (1) for these two groups separately to ascertain whether the coefficients of the tournament incentive variables differ between the two samples. Table 7 provides the regression results. Coefficients on both *LnGAP* and *LnVPSTD* are insignificant (Columns 1 & 2). Columns (3)and (4)report the results for the non-CEO turnover group. The coefficients on both these tournament variables are significantly negative (coefficients of −0.14 and −0.18 respectively, p < 0.01). The comparison of the coefficients across the two groups reveals that the magnitude of the coefficients on both the tournament variables is greater for the non-CEO turnover groups compared to the CEO turnover group. Hence, the test results support our hypothesis H3a, i.e.,the tournament incentives' effect on constraining the occurrence of restatements is greater for the non-CEO turnover years compared with the CEO turnover years. A Chow test of the difference in coefficient on *LnGAP* between Column (1)and Column (3)shows a significant difference (test statistic of 29.60, significant at p < 0.10). However, an insignificant result is obtained when the coefficient on *LnGAP* in Column (2)is compared with the coefficient in Column (4)(test statistic 15.62). It is obvious that when there is no CEO turnover, the tournament incentive can exert a bigger effect on restatements than it does in years with CEO turnover.

We extend the above analysis by considering the scenario in which the successor CEO is recruited from inside the organizations (internal CEO), as compared with the scenario in which the successor CEO is recruited externally (external CEO). Our proposition H3b is that the tournament effect on reducing the occurrence of restatement is weaker if a successor CEO is recruited from outside. An

Table 6

Regressions for the effects of tournament incentives on financial restatements for SOEs and Non-SOEs.

The model summarizes estimation results of Eq.(1), for the 2008–2015 period for SOEs and Non-SOEs. Robust t-statistics are in brackets. All variables are defined in Appendix A.

	(1)	(2)	(3)	(4)
	SOE = 0	SOE = 1	SOE = 0	SOE = 1
LnGAP	−0.0960**	−0.2008***	–	–
	[−2.11]	[−3.31]		
LnVPSTD	–	–	−0.0934*	−0.2120***
			[−1.77]	[−3.60]
INDE	0.3373	−0.6264	0.3048	−0.7219
	[0.46]	[−0.81]	[0.42]	[−0.93]
BIG4	−0.1404	−0.3842**	−0.1308	−0.3824**
	[−0.50]	[−2.20]	[−0.47]	[−2.19]
SHARE1	−0.1960	−0.4418	−0.1989	−0.4496
	[−0.83]	[−1.58]	[−0.85]	[−1.61]
MANSHARE	0.2262	2.4615	0.1772	2.5677
	[1.02]	[0.61]	[0.80]	[0.64]
COMPEN	−0.0038	0.0083	−0.0053	0.0073
	[−0.52]	[1.19]	[−0.72]	[1.07]
ACCRUAL	0.0704	0.1878	0.0693	0.1781
	[0.60]	[1.29]	[0.58]	[1.23]
LnBDSIZE	0.0244	0.2732	−0.0033	0.1969
	[0.11]	[1.32]	[−0.02]	[0.96]
SIZE	−0.0436	−0.0708*	−0.0410	−0.0654
	[−1.17]	[−1.71]	[−1.08]	[−1.57]
GROW	0.0413**	0.0360*	0.0424**	0.0379*
	[2.28]	[1.71]	[2.36]	[1.82]
ROA	−1.8785***	−0.1991	−1.8863***	−0.1798
	[−2.76]	[−0.26]	[−2.77]	[−0.23]
LEV	0.2309	0.7832***	0.2403	0.7797***
	[1.43]	[3.72]	[1.49]	[3.70]
Ind/year	Yes	Yes	Yes	Yes
Constant	0.4199	1.9740*	0.3883	2.1431**
	[0.42]	[1.89]	[0.38]	[2.06]
Observations	8782	7449	8782	7449
Chi(2)	202.83***	278.73***	200.99***	275.72***
Adj. R-squared	0.0265	0.0519	0.0263	0.0522
Difference test	25.14*		26.72*	

*** $p < 0.01$.

** $p < 0.05$.

* $p < 0.10$.

empirical test of H3b is carried out and the results are reported in Table 8. During the data collection stage, we found that CEO turnover occurred more than once for some companies. To obtain a cleaner sample, we deleted all the companies that experienced more than one CEO turnover during a year. Columns (1)and (2)in Table 8 present regression results for tournament variables for the sub-group sample in which successor CEOs were appointed from within the organization. As predicted, we find the coefficients on both LnGAP and LnVPSTD to be negative and significant for the internal CEO group (coefficients −0.15 and −0.18 respectively, $p < 0.01$). The corresponding coefficients for the external CEO group are both insignificant (t-statistics are −1.30 and −1.32 respectively). Similar to the CEO turnover analysis, we use the Chow test for regression (1)to test whether there is a significant difference between the coefficients on LnGAP for the internal versus the external CEO groups. A significant test statistic of 23.18 suggests that the coefficient on LnGAP is significantly higher for the internal CEO group as opposed to the external CEO group. For the LnVPSTD measure, the Chow test again reveals a significantly higher coefficient for the internal CEO group compared to the external CEO group (test statistic of 23.77, significant at $p < 0.10$). Taken together, our results provide support for the prediction that tournament incentives will be more effective in constraining financial restatements when successor CEOs are promoted from within the organization.

6. Robustness tests

We conduct four additional tests to examine the robustness of our results. First, there is an endogeneity problem between tournament incentives and financial restatements that might influence our conclusion. To the extent that the compensation gap is endogenously determined (Lin & Lu, 2009), firms with fewer financial restatements tend to have better quality of earnings; hence, for the executives, the probability of promotion might increase. Therefore, we use the lagged incentive variables, LnGAP and LnVPSTD (Kini & Williams, 2012). There is no significant change in results. Second, Lin and Lu (2009) posit that firms with better performance

Table 7

Regressions for the effects of tournament incentives on financial restatements when there is CEO turnover and non-CEO turnover.

The model summarizes estimation results of Eq.(1) for the 2008–2015 period, for CEO turnover and non-CEO turnover. Robust t-statistics are in brackets. All variables are defined in Appendix A.

	CEO turnover		Non-CEO turnover	
	(1)	(2)	(3)	(4)
LnGAP	−0.1178		−0.1364***	
	[−1.58]		[−3.31]	
LnVPSTD		−0.0775		−0.1789***
		[−0.91]		[−4.11]
CONTL	−0.1207	−0.1224	−0.1158*	−0.1049
	[−0.99]	[−1.01]	[−1.81]	[−1.63]
INDE	−0.1049	−0.1359	0.0087	−0.0681
	[−0.10]	[−0.13]	[0.02]	[−0.12]
BIG4	−0.4658	−0.4852*	−0.3135**	−0.2995*
	[−1.59]	[−1.66]	[−2.03]	[−1.94]
SHARE1	−0.4984	−0.5211	−0.2769	−0.2763
	[−1.40]	[−1.47]	[−1.40]	[−1.40]
MANSHARE	−0.3124	−0.4004	0.3888*	0.3219
	[−0.57]	[−0.73]	[1.66]	[1.38]
COMPEN	−0.0030	−0.0077	0.0028	0.0039
	[−0.30]	[−0.75]	[0.49]	[0.70]
ACCRUAL	0.1299	0.1302	0.1115	0.1040
	[0.77]	[0.77]	[1.04]	[0.97]
LnBDSIZE	0.2660	0.2178	0.0551	0.0154
	[0.89]	[0.73]	[0.33]	[0.09]
SIZE	−0.0510	−0.0535	−0.0587*	−0.0484
	[−1.02]	[−1.06]	[−1.92]	[−1.56]
GROW	0.0205	0.0221	0.0424***	0.0433***
	[0.67]	[0.73]	[2.76]	[2.84]
ROA	−1.2574	−1.2654	−1.3342**	−1.2530**
	[−1.29]	[−1.29]	[−2.37]	[−2.24]
LEV	0.1320	0.1596	0.4687***	0.4615***
	[0.57]	[0.69]	[3.26]	[3.20]
Constant	0.5692	0.2763	1.3799*	1.7206**
	[0.40]	[0.19]	[1.80]	[2.22]
Ind/year	Yes	Yes	Yes	Yes
P-R2	0.0526	0.0519	0.0327	0.0333
Wald-Chi(2)	143.04***	141.91***	343.05***	344.92***
N	2964	2964	13,270	13,270
Difference test	29.60*	15.65		

*** p < 0.01.
** p < 0.05.
* p < 0.10.

and greater managerial power are likely to have a greater compensation gap. Hence, the negative association between pay gap and financial restatement might be explained by managerial power and/or tournament incentives. Based on the median of *COMPEN*, we split the sample into two sub-samples: a low compensation sample (observations < *COMPEN* median) and a high compensation sample (observations > *COMPEN* median). We find no significant difference between these two groups. Hence, no support is provided for the managerial power theory. Third, Yang et al. (2009) find that the size of the board will influence fraud, and that there is an inverse U relation between board size and fraud in China. Therefore, in addition to controlling for board size (*LnBDSIZE*), we re-run our analysis using the square of board size (*LnBDSIZE*^{2}) to provide an alternative control. Again our inference remains the same. As a final sensitivity test we include an audit committee variable, *AC* (coded 1 if the company has an audit committee, and 0 otherwise). Previous studies have found a significant negative association between an independent audit committee with financial expertise and restatement (Abbott, Parker, & Peters, 2004). The inclusion of *AC* does not materially alter our previous findings.

7. Concluding remarks

We examine the effect of tournament incentives on reducing the likelihood of financial restatements using data from Chinese A share listed companies. We find that tournament incentives in terms of a greater pay gap encourage executives to refrain from actions that might give rise to financial restatements ex-post. We also consider the effect of tournament incentives on core and non-core financial restatements, and document that tournament incentives constrain the occurrence of core as well as non-core restatements. We also find that tournament incentives in SOEs are more effective than tournament incentives in non-SOEs in constraining the occurrence of financial restatements. Such results contradict our hypothesis. Although previous studies suggest that the tournament (cash incentive) is weaker in SOEs, and its link to firm performance is found to be weaker, we argue that the size of the tournament

Table 8

Regressions for the effects of tournament incentives on financial restatements based on internally and externally recruited successor CEOs.

The model summarizes estimation results of Eq.(1) for the 2008–2015 period based on recruitment of a successor CEO. Robust t-statistics are in brackets. All variables are defined in Appendix A.

	Internal CEO		External CEO	
	(1)	(2)	(3)	(4)
LnGAP	−0.1465***		−0.1242	
	[−2.59]		[−1.30]	
LnVPSTD		−0.1810***		−0.1298
		[−2.80]		[−1.32]
CONTL	−0.0102	−0.0036	−0.4659***	−0.4651***
	[−0.11]	[−0.04]	[−2.74]	[−2.73]
INDE	−0.7708	−0.8734	0.2533	0.2709
	[−0.93]	[−1.05]	[0.15]	[0.16]
BIG4	−0.4845**	−0.4862**	0.0465	0.0415
	[−2.21]	[−2.23]	[0.14]	[0.12]
SHARE1	−0.5406*	−0.5505*	−0.5765	−0.6037
	[−1.81]	[−1.85]	[−1.17]	[−1.23]
MANSHARE	0.1226	0.0197	0.9747	0.9176
	[0.33]	[0.05]	[1.26]	[1.19]
COMPEN	−0.0066	−0.0063	−0.0107	−0.0124
	[−0.77]	[−0.75]	[−0.64]	[−0.77]
ACCRUAL	0.0383	0.0266	−0.0695	−0.0844
	[0.28]	[0.19]	[−0.36]	[−0.44]
LnBDSIZE	0.0029	−0.0531	0.1269	0.0787
	[0.01]	[−0.22]	[0.31]	[0.19]
SIZE	−0.0876**	−0.0753*	−0.0393	−0.0360
	[−1.99]	[−1.65]	[−0.55]	[−0.51]
GROW	0.0165	0.0181	0.1205***	0.1209***
	[0.68]	[0.76]	[5.09]	[5.15]
ROA	−0.6249	−0.5339	−1.3558	−1.3097
	[−0.71]	[−0.61]	[−1.13]	[−1.09]
LEV	0.3605	0.3505	1.0806***	1.0986***
	[1.62]	[1.56]	[3.71]	[3.83]
Constant	2.7888**	3.0677**	−0.1688	−0.1005
	[2.33]	[2.57]	[−0.09]	[−0.05]
Ind/year	Yes	Yes	Yes	Yes
P-R2	0.0451	0.0454	0.0751	0.0750
Wald-Chi(2)	237.75***	237.10***	151.32***	147.56***
N	6298	6298	1960	1960
Difference test	23.18*	23.77*		

*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.10$.

reflects the executive's administrative position in the political hierarchy, the scale of the political promotion, and the political benefits the executives could receive when they are promoted. Tournament winners often receive higher levels of life-long benefits along with political promotion. These cannot be measured easily, but play a very important role in motivating SOE executives to reduce the occurrence of financial restatements. We also find that the negative association between tournament incentives and financial restatements is related to CEO turnover, and is stronger when the incoming CEO is recruited from within the organization.

Our study is the first to document a link between tournament incentives and the occurrence of financial restatements. We contribute to the corporate governance literature by documenting the effects of a differential compensation structure on financial restatements in Chinese SOE versus non-SOE listed companies. Second, by examining the impact of tournament incentives on both core and non-core financial restatements, we enrich the accounting restatement literature in a different institutional setting. Third, we use CEO turnover as a contextual variable in examining the association between tournament incentives and financial restatements. In this way, we contribute to the CEO turnover literature by documenting the moderating effects of CEO turnover. Our findings may also have implications for policy-makers in China.

Our findings can also be evaluated in light of the recently initiated "pay cap" policy enforced by the SASAC in 2014. This regulation was intended to narrow the pay differences between the executives and employees for SOEs, owing to the public scrutiny over SOE executives receiving large compensation. Our study suggests that as long as the SOE executives' pay is closely linked to their administrative positions in the political hierarchy, tournament incentives in listed SOEs will exert a constraining effect. Having said that, the Chinese government is working on enforcing a more transparent and fairly designed executive compensation plan for SOEs. We anticipate a de-linkage of political positon and executive pay in the future, and such change will impact significantly on the effect of tournament incentives in Chinese listed SOEs.

Although our results are unlikely to be generalized across different jurisdictions (in particular, in the Western countries where

SOEs and ownership concentration are not pronounced), results from this research provide important insights into understanding the effect of tournament incentives on restatements in corporations with a strong state influence on corporate governance.

Appendix A. Variable definitions

Variable type	Variable form	Variable name	Measurement
Dependent variable	RES	Financial restatements	An indicator variable coded 1 for firm-year observations with restatements (includes both core as well as non-core restatements), and 0 otherwise.
Independent variables	LnGAP	Tournament incentive 1	Natural logarithm of compensation gap, Compensation gap = mean of top 3 executives' compensation − mean of the remaining executives' compensation (Lin & Lu, 2009). Executives are President (CEO), Vice Presidents, Deputies, Secretary to the Board, and other senior managers as reported in the annual reports, excluding independent board directors and members of supervisory boards.
	LnVPSTD	Tournament incentive 2	Natural logarithm of standard deviation of all executives' compensation excluding CEO's.
Control variables	CONTL	Ownership structure	An indicator variable coded 1 1 if the firm is an SOE, and 0 otherwise.
	INDE	Ratio of independent directors	Ratio of number of independent directors on the board to total board size.
	BIG4	Big 4 auditing	If annual statement audited by international Big 4 = 1; otherwise = 0.
	SHARE1	Equity share of ultimate shareholder	Equity shareholding of ultimate shareholder.
	MANSHARE	Stock holding of executives	Total stock holdings of all executive members.
	COMPEN	Compensation	Mean compensation of top 3 executives divided by mean compensation of all personnel.[a]
	ACCRUAL	Accruals	Total accruals to sales, which is calculated as net income minus operating cash flows, divided by lagged assets.
	LnBDSIZE	Size of board	Natural logarithm of number of board members.
	LEV	Leverage	Total debt divided by total assets.
	SIZE	Size	Natural logarithm of total assets.
	ROA	Profitability	Return on assets.
	GROW	Growth	Growth ratio of revenue.
	Ind	Industry dummy	–
	Year	Year dummy	–

[a] For the variable *Compensation*, we use the relative rather than the absolute form. Using the relative form of compensation controls for the noise of compensation resulting from the increase in labor costs and wage levels over the past decade in China.

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