Government Regulation and Classification Shifting in Chinese SOEs

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Abstract

This study investigates earnings management through classification shifting after implementation of government regulation with Chinese data. Classification shifting is the deliberate misclassification of items within income statement. With Differences-in-Differences (DID) estimation, there are two key findings. First, the proportion of state-owned enterprises' consumption expenditures in cash coming into operating expenses in the period decreased significantly. Second, we find a strong tendency for managers to shift expenses upwardly into inventory items.

Keywords: Government regulation, Classification shifting

1. Introduction

State-owned enterprises are the important material and political foundation of socialism with Chinese characteristics. Since the founding of new China, especially since the reform and opening up, China's state-owned enterprises make a historic contribution for China's economic and social development, scientific and technological progress, national defense construction, as well as the people's livelihood. Under the new situation, state-owned enterprises have become an important force in the implementation of the strategy of "going out" and "the Belt and Road Initiative ". Since the 1980s, the reform of state-owned enterprises has been the focus of China's economic restructuring; the government began to focus on the establishment and improvement of the manager market, the experimental implementation of enterprise management reform. After a long period of painstaking efforts, China's manager market is gradually formed, but our manager market, especially the state-owned enterprise managers market is still to some extent subject to control (Grove et al., 1995; Qian ,1995).

State-owned enterprise managers facing the salary control, stem from the state-owned assets management system and the government's administrative intervention. The state-owned asset management department (SASAC, in China), which is the owner, is naturally at a disadvantage in information, and it is difficult to observe the operating performance of state-owned enterprises at low cost. This means that it is very difficult for the government and the operators to sign an effective incentive contract in advance; meanwhile it is difficult to implement effective supervision after the event. The existence of administrative intervention makes the enterprise bear the policy burden (of course obtain the policy benefits) and the enterprise goal turns from the enterprise value maximization to the goal diversification, which causes an obscure causal relationship between the enterprise performance and the operators' efforts and might further aggravate the disadvantages concerning the government's position in this asymmetric information transactions. The implementation of this control, in fact, deprived of their right to negotiate on compensation for managers, making constraints when hiring managers for SOEs. Such a uniform compensation contract is not as effective in terms of efficiency as a free-market-based compensation contract. Making a choice under such situation is quite different from a free contractual compensation constraint. On the one hand, even if the initial pay control may be based on the right judgments (in fact it is impossible), because the economic environment changes are usually beyond the scope of the controller to allow the cost of observation, and costs spent on adjusting pay contract may also hinder it, as time went on, pay regulation will usually show a rigid feature. Lagging and rigid pay regulation may gradually lead to a series of serious moral hazard. On the other hand, since performance-based compensation arrangements cannot be effectively implemented, alternative institutional arrangements may emerge.

Therefore, in the state-owned enterprises there is an alternative way under the control of pay arrangements, not directly reflected in the monetary reward system, that is on-the-job consumption is one of them. Since the 18th National Congress of the Communist Party of China (CPC), it has been the goal of units at all levels to carry out the principle of diligence and thrift. Supervision is the fundamental guarantee for the correct functioning of the power, the CPC Central Committee Political Bureau held a meeting on December 4, 2012, publicized a regulation in the form of eight provisions about improving the work style, close contact with the masses. 31 provinces and autonomous regions and Xinjiang Production and Construction Corps, 139 central and state organs, 106 central enterprises, 15 central financial enterprises are obliged to implement the central eight provisions the Central Commission for Discipline Inspection launched Monthly Spiritual System.

According to media published information, in September 2016 they investigated and dealt with 3489 issues, of which 818 illegal payment of subsidies or benefits, 689 illegal gifts giving and receiving, illegal use of official vehicles with 490, 492 illegal eating and drinking, 508 accept or use public funds to participate in high-spending entertainment and fitness activities, illegal access to private clubs, leading cadres housing irregularities 222 cases, 179 public funds travel and so on.

Facing the regulation, state-owned enterprises have two kinds of response measures: First, reduce the size of public consumption just follow implementation of the regulation, but this will decrease management on-the-job consumption; the second is not lower public consumption level, an alternative way is reflect the consumption of public funds through more subtle accounting subject (such as raw materials, production costs, inventory subjects) ,not directly through the sensitive accounting subjects (such as operating expenses such as selling expenses and general & administrative expenses) in order to circumvent the upper authorities, the Commission for Discipline Inspection and the supervision of the public.

For example, according to a report in the media, "Enterprises to buy shopping cards for gifts, visits and other business hospitality activities, if the opening of the invoice is the 'computer' and other production cost or materials, that will go into the 'fixed assets' It might be the strongest concealment. " As the external supervision departments is more sensitive to business hospitality reported in selling expenses and general & administrative expenses ,while it might be the opposite to abnormal commodity cost items or inflated inventory value. State-owned enterprises may manipulate such expenses, both to maintain a certain level of on-the-job consumption, while they can effectively circumvent external oversight. In contrast, since non-SOEs are not affected by the regulation, there is no significant increase in the manipulation of such charges. To this end, we expect such charges will increase the manipulation after the introduction of state-owned enterprises compared to non-state-owned enterprises.

We use the differences-in-differences (DID) model to study the influence of the regulation on the manipulation of the expenses of state-owned enterprises, taking the non-state-owned enterprises as the control group. We employ A-share listed companies in 2011 and 2013 as the research object, and find that after the regulation introduction, relative to non-state-owned enterprises, the proportion of state-owned enterprises' consumption expenditures in cash coming into operating expenses in the period decreased significantly. Also, we find a strong tendency for managers to shift expenses upwardly into inventory items. This indicates that after the introduction of the regulation, state-owned enterprises are likely to shift consumption expenditures in cash into the current inventory (such as materials, manufacturing costs, etc.), so as to avoid outside attention caused by the high expenses in the period.

We make several contributions to the literature. First, we provide direct evidence that managers utilize classification shifting to avoid the effect of the regulation .There is limited evidence on whether managers misclassify some items to quantify the effect of implementing the regulation of the Central Government although there are many media reports and macroscopic statistical results. Second, we introduce the difference-in-difference model to estimate the exogenous shock provided by the regulation and make use of the non-state enterprises as the control group, which better serves to detect earnings management through classification shifting and helps to better control the endogeneity problem.

The rest of the study is organized as follows. Section 2 discusses the relevant literature and develops the hypotheses. Section 3 discusses the research design. Section 4 reports the results. Section 5 concludes with a summary of the findings in this study.

2. Prior literature and hypothesis development

2.1. Prior literature

With regard to the earnings management behavior of the company, the existing research focuses on the earnings management of the company, most of which focus on accrual management or real activities earnings management (Roychowdhury, 2006). However, in recent years, a new field of research has begun to examine smoothing through classification (hence, classificatory smoothing). Unlike accrual management or real activity manipulation, classification shifting does not change net income and may be a less costly form of earnings management.

Specifically, since the stakeholders of the company have different attentions to the different expense subjects, the management has the motivation to change the stakeholder's evaluation of the company's performance by manipulating the classification of the costs (Dye, 2002). For example, investors tend to focus more on recurring earnings (net of all revenues and expenses), while less attention is paid to nonrecurring earnings. Thus, management has incentives to classify intra-income statement items to reduce variations over time in that statistic. Researchers began to study the problem of classifying cost items during 1970s (Ronen and Sadan,1975;Barnea et al., 1976). They found that when the company's ordinary income reached above the industry level, smoothing of ordinary income with extraordinary items could be undertaken to produce an income number that can be used to achieve the purpose of smoothing the ordinary income. Fan et al. (2010) found the same results based on evidence from quarterly special items and found that the effect occurred mainly in the fourth quarter of the fiscal year and when firms are profitable. Barua et al. (2010) examine whether managers use classification shifting to manage earnings when reporting discontinued operations. And a similar conclusion has been reached, firms shift operating expenses to income-decreasing discontinued operations to increase core earnings. Fan and Liu (2012) further classify the total core expenses as the cost of the main business and the period by pooling COGS and SGA together. Givoly et al. (1999) found that management would manipulate cost allocation methods and transfer pricing to reduce corporate profits from low P/E ratios to high P/E ratios, thus misleading investors and increasing overall P/E ratios.

Using a similar design, subsequent studies provide additional evidence consistent with expense misclassification. This kind of categorical manipulation also exists in the UK and East Asian countries (Athanasakou et al.,2007; Haw et al.,2011;Shirato and Nagata,2012).Newton and Thomas (2011) found that nonprofit organizations also use cost shifting to manipulate their main business profits. Specifically, it could be more beneficial for managers to reclassify expenses from non-core to core activities so as to achieve the purpose of reducing core business profits. On the motivations of cost shifting manipulation, existing research based on Western capital markets found that the main reason is to meet or beat earnings benchmarks(McVay, 2006), or to smooth operating profits (Ronen and Sadan, 1975), or to improve the company's P/E (Givoly et al.,1999). Fan and Liu (2012) find that cost shifting manipulation is influenced by the firm's asset structure. Haw et al. (2011) found that good corporate governance (the legal system and Big Four audit) can suppress this behavior. It also stems from operational risk, agency costs, ownership structure (Beattie et al.,1994). Newton and Thomas (2011) found that costly categorization was more frequent when hospitals were subject to more stringent public pressure, weaker regulation, and greater reliance on outside donations.

However, the present study has not examined whether managers manipulate earnings through shifting expenditure in cash into production cost items or inventory items so as to circumvent the concerns of external supervisors.

2.2. Hypotheses

Classic theory of the enterprise considers that the company's managers and owners of the interests are not entirely consistent; managers more or less perform some behavior inconsistent with interests of the owner. Berle and Means (1932) argued that when management had only a small stake in the company and the shareholders were too dispersed, the company's assets could be allocated to benefit managers rather than shareholders, including shirking, obtaining additional allowances, and pursuing non-business value maximization goals, such as sales growth rate, build personal empires and increase employee benefits.

Further, Jensen and Meckling (1976) proceed from the principal-agent relationship in the company, consider the agent does not always follow the principle of maximizing the principal's interests, and the principal can limit the agent's departure from the principal by establishing incentive and supervisory mechanisms, but it is not possible to completely eliminate such acts.

Without consideration of supervision, if the operator can freely choose the level of subsidies, because they only need to bear part of the cost, then they can increase their non-monetary benefits to maximize their utility. The less shares the operator has, the less part of their consumption burden, the more they will tend to enjoy more non-monetary benefits.

Alchian and Demsetz (1972) explain the endogeneity of on-the-job consumption stems from the point of view of information costs. They argue that the cost of putting an end to the opportunistic behavior described above is different from that of the above-mentioned scholars, thus allowing staff to enjoy the "privilege, additional benefits and benefits" outweighing the high cost of information.

In order to avoid the supervision of public expenditure on consumer spending, state-owned enterprises have two choices: first, reduce public consumption expenditure, but this will reduce the level of management on-the-job consumption. The other is not reduce or limit public consumption expenditure, when it comes to reimbursement, part of the public consumption expenditure is not included in the sensitive accounting items (such as hospitality, office expenses), but in other non-sensitive accounting items (such as materials, manufacturing costs).However, this will result in an increase in the ending inventory balance or current operating costs. Such cost classification manipulation can circumvent external concerns about over-spending (such as excessive hospitality) without significantly reducing the current level of on-the-job consumption. Since sensitive accounting items (such as hospitality, office expenses, etc.) are wrongly labeled, we expect such cost shifting manipulation will result in a reduction in the selling and administrative expenses and a rise in cost of goods sold or capitalization.

As the government, regulation only makes an impact on the organs and institutions and state-owned enterprises, but does not affect non-state-owned enterprises, so we can have non-state-owned enterprises as a control group. We expect that after the introduction of the regulation, the percentage of SOEs' consumption expenditures cash will be reduced in the period compared with that of non-SOEs, but will be included in other non-sensitive accounting items (such as materials and manufacturing expenses , thereafter into the end of the balance of inventory or core expenses) tend to rise. We state our hypothesis tested in this study as follows:

H1: After implementation of the government regulation, SOEs shift consumption expenditures in cash downwardly that should be classified as selling or administrative expenses compared with non-SOEs.

H2: After implementation of the government regulation, SOEs shift consumption expenditures in cash upwardly that should be classified as selling or administrative expenses to cost of goods sold or inventory items compared with non-SOEs.

3. Methodology

3.1. Sample and measurement of consumption expenditures in cash

Our initial sample consists of firms listed in the Shenzhen and Shanghai Stock Exchange, whose data including financial statements, and management earnings forecasts, stock price are available from CSMAR database for the years 2011 to 2013.

To measure consumption expenditures in cash, we collected data from the cash flow statement disclosed in the "other cash paid related to operating activities" and through following adjustment, we employ it as a proxy for consumption expenditures in cash. We also found two major parts constitute the above item, cash expenditures (selling and administrative expenses) and cash payments for other receivables. As the latter does not belong to consumption expenditures in cash, for this purpose, "other cash paid related to operating activities" less the increase amount of other account receivable, plus the increase amount of other payables in this period, and then scaled by the average total assets, then we get adjusted amount of other operating cash flows (OCFO), the proxy variable for consumption expenditures in cash.

As the government regulation began to implement from December 2012, it is difficult to observe whether the 2012 financial statements of listed companies are subject to the effect of government regulation, so we drop data in 2012. We use the Differences-in-Differences (DID) model to study the impact of national policy intervention on corporate accounting behavior. Differences-in-Differences (DID) estimation has become an increasingly popular way to estimate causal relationships. DD estimation consists of identifying a specific intervention or treatment (often the passage of a law). One then compares the difference in outcomes after and before the intervention for groups affected by the intervention to the same difference for unaffected groups.

We use state-owned enterprises as experimental groups and non-state-owned enterprises as control groups, and 2013 as after policy year and 2011 as prior policy year. We only select the policy changes before and after the year, because DID is usually used in a relatively short time window addressing to the policy impact. We select the sample according to the following procedure: Firstly, the financial listed companies are excluded, because the regulatory system and the reporting structure of financial listed companies are quite different from those of other industries. Secondly, the companies with missing data on the empirical variables are excluded. Consequently, we obtained a total of 4468 firm-year observations.

3.2. Model design

We use the Differences-in-Differences (DD) model to study Hypothesis 1.

$$
\begin{aligned}
EXPENDITURE_{it} = {} & \alpha + \beta_1 OCFO_{it} + \beta_2 STATE_{it} + \beta_3 REG_{it} \\
& + \beta_4 STATE_{it} \times REG_{it} + \beta_5 OCFO_{it} \times STATE_{it} \\
& + \beta_6 OCFO_{it} \times REG_{it} + \beta_7 OCFO_{it} \times STATE_{it} \times REG_{it} \\
& + \beta_8 SIZE_{it} + \beta_9 COMPENSATION_{it} + \beta_{10} PPE_{it} + \varepsilon_{it}
\end{aligned} \tag{1}
$$

Among them, the dependent variable EXPENDITURE of model (1) is the sum of selling expenses and administrative expenses, scaled by the average assets. We use the sum of selling expenses and administrative expenses as the dependent variable rather than the business hospitality expenses in the annotated notes because the items disclosed in the notes are voluntary disclosure and a significant proportion of the companies do not disclose these detailed items, so there is a more serious problem of sample self-selection. Then this problem does not exist when we use all of the selling expenses and administrative expenses.

The key independent variable, OCFO, is the proxy variable for consumption expenditures in cash defined above. STATE is a dummy variable that identifies whether a listed company is a state-owned company. If the company is a state-owned company, the value is 1, otherwise the value is 0. REG is a dummy variable that indicates whether the government implements policy intervention. If fiscal year is after the implementation of the regulation in December 2012 then its value is 1, otherwise its value is 0. Since EXPENDITURE includes some non-cash expenses, such as employee salaries, depreciation and so on. We add the employee compensation (COMPENSATION) and net fixed assets (PPE) as the control variables. In addition, we also control the size of the company, which equals to the natural logarithms of the company's core business income. In order to examine after implementation of the government regulation, SOEs shift consumption expenditures in cash which should be classified as selling or administrative expenses whether to cost of goods sold or inventory items, we further use the following model to test:

$$
\begin{aligned}
OC_{it} (DeltaINV_{it}) = {} & \alpha + \beta_1 OCFO_{it} + \beta_2 STATE_{it} + \beta_3 REG_{it} \\
& + \beta_4 STATE_{it} \times REG_{it} + \beta_5 OCFO_{it} \times STATE_{it} \\
& + \beta_6 OCFO_{it} \times REG_{it} + \beta_7 OCFO_{it} \times STATE_{it} \times REG_{it} \\
& + \beta_8 SIZE_{it} + \varepsilon_{it}
\end{aligned} \tag{2}
$$

The dependent variables of the model (2) are the operating cost (OC) and the current inventory balance increase (DeltaINV). In particular, the operating cost (OC) is the "cost of goods sold" item in the income statement divided by the average total assets. The increase in inventories (DeltaINV) is the difference between the net inventory at the end of the period and the net inventory at the beginning of the period, scaled by average total assets. The other variables are defined the same as in model (1). Theoretically, if there is no cost shifting manipulation behavior, the coefficients of OCFO × STATE × REG should be insignificant. If the coefficient is significantly positive, it means that after the regulation, SOEs shift consumption expenditures in cash upwardly that should be classified as selling or administrative expenses to cost of goods sold or inventory items (such as manufacturing costs, etc.).

4. Empirical Results

4.1. Descriptive statistics

Table 1 shows the descriptive statistics of the main variables.

On average, consumption expenditures in cash represent approximately 7% of total assets and selling expenses and administrative expenses account for 9.4% of total assets.

The total of the two charges is higher than the consumption expenditures in cash, because the two costs also include part of the non-cash costs (such as depreciation), and staff salaries. To this end, we add fixed assets (PPE) and employee salaries (COMPENSATION) to the regression model to control this non-cash expense. In addition, about 43% of companies are state-owned enterprises; about 54% of the observations from the policy after the enactment.

Table 1

The table reports descriptive statistics of the main variables. Variable definitions: EXPENDITURE= the sum of selling expenses and administrative expenses divided by the average assets. OCFO="other cash paid related to operating activities" less the increase amount of other account receivable plus the increase amount of other payables in this period and then scaled by the average total assets. OC="cost of goods sold" item in the income statement divided by the average total assets. DeltaINV =the difference between the net inventory at the end of the period and the net inventory at the beginning of the period, scaled by average total assets. STATE is a dummy variable that identifies whether a listed company is a state-owned company. If the company is a state-owned company, the value is 1, otherwise the value is 0. REG is a dummy variable that indicates whether the government implements policy intervention. If fiscal year is after the implementation of the regulation in December 2012 then its value is 1, otherwise its value is 0. COMPENSATION=cash paid to and for employees disclosed in cash flow statement. PPE =net fixed assets. Size=natural log of the company's core business income. The variables are winsorized at the 1% and 99% percentiles to deal with outliers.

*,**,***indicate significance at 10%,5%, and 1%(two-sided),respectively.

Variable	N	mean	sd	min	p50	max
EXPENDITURE	4468	0.094	0.073	0.007	0.075	0.407
OC	4468	0.555	0.484	0.021	0.427	2.705
DeltaINV	4468	0.027	0.065	-0.137	0.013	0.356
OCFO	4468	0.070	0.080	-0.118	0.051	0.458
REOCFO	4468	0.062	0.083	-0.168	0.046	0.458
STATE	4468	0.433	0.495	0	0	1
REG	4468	0.542	0.498	0	1	1
SIZE	4468	21.208	1.520	17.058	21.109	25.299
COMPENSATION	4468	3.99E+08	8.92E+08	4435840	1.33E+08	6.43E+09
PPE	4468	2.07E+09	5.63E+09	2726571	4.51E+08	4.15E+10

4.2. Correlation analysis

Table 2 reports the correlation coefficients for the primary variables, with the Pearson and Spearman correlation coefficients in the lower left and upper right corners, respectively.

Table 2

The table reports correlation coefficients for the primary variables. Variable definitions: EXPENDITURE= the sum of selling expenses and administrative expenses divided by the average assets. OCFO="other cash paid related to operating activities" less the increase amount of other account receivable plus the increase amount of other payables in this period and then scaled by the average total assets. OC="cost of goods sold" item in the income statement divided by the average total assets. Delta INV =the difference between the net inventory at the end of the period and the net inventory at the beginning of the period, scaled by average total assets. STATE is a dummy variable that identifies whether a listed company is a state-owned company. If the company is a state-owned company, the value is 1, otherwise the value is 0. REG is a dummy variable that indicates whether the government implements policy intervention. If fiscal year is after the implementation of the regulation in December 2012 then its value is 1, otherwise its value is 0. COMPENSATION=cash paid to and for employees disclosed in cash flow statement. PPE =net fixed assets. Size=natural log of the company's core business income. The variables are winsorized at the 1% and 99% percentiles to deal with outliers.

*,**,***indicate significance at 10%, 5%, and 1%(two-sided),respectively.

	EXPENDITURE	OC	DeltaINV	OCFO	REOCFO	STATE	REG	SIZE	COMPENSATION	PPE
EXPENDITURE	1	0.299***	0.002	0.523***	0.514***	-0.122***	0.016	-0.054***	0.129***	-0.144***
OC	0.204***	1	0.017	0.127***	0.033**	0.149***	-0.058***	0.541***	0.354***	0.266***
DeltaINV	-0.049***	-0.004	1	0.124***	0.107***	-0.063***	-0.145***	0.076***	0.031**	-0.057***
OCFO	0.483***	0.093***	0.112***	1	0.954***	-0.078***	-0.035*	-0.007	0.033**	-0.159***
REOCFO	0.476***	0.000	0.097***	0.969***	1	-0.139***	-0.034*	-0.159***	-0.100***	-0.264***
STATE	-0.097***	0.139***	-0.041***	-0.038*	-0.094***	1	-0.069***	0.374***	0.395***	0.366***
REG	0.010	-0.063***	-0.114***	-0.029*	-0.029*	-0.069***	1	0.020	0.078***	0.056***
SIZE	-0.000	0.500***	0.068***	-0.009	-0.169***	0.372***	0.022	1	0.837***	0.723***
COMPENSATION	0.025	0.162***	-0.019	-0.031**	-0.227***	0.259***	0.035*	0.625***	1	0.735***
PPE	-0.152***	0.054***	-0.063***	-0.116***	-0.279***	0.272***	0.025*	0.536***	0.758***	1

4.3. Regression analysis

Table 3 reports the results of hypothesis H1. In the model (1), the regression coefficient of OCFO reflects the proportion of consumption expenditure of non-state-owned enterprises in the current period before the introduction of the government regulation. OCFO × STATE reflects the difference between the state-owned (treatment group) and the non-state-owned enterprise (control group) before the government regulation in the consumption of cash expenditure ratio. OCFO × REG reflects the changes in the proportion of consumption cash expenditures incurred by the non-state-owned enterprises (the control group) after the introduction of the government regulation.

OCFO × STATE × REG reflects the changes in the proportion of the consumption expenditures in cash in the state-owned enterprises (treatment group) after the introduction of the government regulation. If there is no regulation caused by the cost of classification of manipulation, the OCFO × STATE × REG interaction of the coefficient should not be significant. If the regression coefficient of OCFO × STATE × REG is significantly negative, it means that after the government regulation, the SOE reduces the percentage of consumption expenditures in cash shifting to current expenses, that is to say, it is possible to classify part of the consumption expenditures to other less sensitive accounts (such as operating costs or inventory items, etc.). Moreover, the larger the absolute value of the coefficient, the more likely this sort of cost classification problem will be.

Table 3

The table reports of OLS regression on EXPENDITURE and OCFO.

Variable definitions: EXPENDITURE= the sum of selling expenses and administrative expenses divided by the average assets. OCFO="other cash paid related to operating activities" less the increase amount of other account receivable plus the increase amount of other payables in this period and then scaled by the average total assets. STATE is a dummy variable that identifies whether a listed company is a state-owned company.

If the company is a state-owned company, the value is 1, otherwise the value is 0. REG is a dummy variable that indicates whether the government implements policy intervention. If fiscal year is after the implementation of the regulation in December 2012 then its value is 1, otherwise its value is 0. COMPENSATION=cash paid to and for employees disclosed in cash flow statement. PPE =net fixed assets. Size=natural log of the company's core business income. The variables are winsorized at the 1% and 99% percentiles to deal with outliers. Clustered T-statistics are in parentheses.

*,**,***indicate significance at 10%,5%,and 1%(two-sided),respectively.

Dependent Variable	EXPENDITURE
Intercept	0.325
	(1.31)
OCFO	0.371***
	(17.68)
STATE	-0.034
	(-0.67)
REG	-0.052
	(-1.17)
STATE*REG	0.044
	(0.64)
OCFO*STATE	-0.385
	(-0.91)
OCFO*REG	0.936**
	(2.46)
OCFO*STATE*REG	-1.338**
	(-2.12)
SIZE	-0.014
	(-1.18)
COMPENSATION	0.340***
	(15.51)
PPE	-0.292***
	(-14.21)
Observations	4,468
R-squared	0.212

Regression results show that the coefficient of OCFO * STATE * REG is significantly negative (-1.338, p <5%). This shows that after implementation of the government regulation, SOEs shift consumption expenditures in cash downwardly that should be classified as selling or administrative expenses by 13 percentage. This supports the hypothesis 1.

In order to further analyze after implementation of the government regulation, SOEs shift consumption expenditures in cash upwardly that should be classified as selling or administrative expenses to cost of goods sold or inventory items compared with non-SOEs. Table 4 reported the operating costs (OC) and inventories change (Delta INV) as the dependent variable regression results. The regression results show that the coefficient of OCFO * STATE * REG interaction is significantly positive (1.283, p <5%) when the dependent variable is operating cost (OC). This may be due to SOEs shift consumption expenditures in cash upwardly that should be classified as selling or administrative expenses to the current manufacturing costs, and then through the sales process into cost of goods sold. The coefficient of the interaction term is positive but statistically insignificant when the dependent variable is the inventory change (Delta INV).

Table 4

The table reports SOE's tendency to shift consumption expenditures in cash upwardly that should be classified as selling or administrative expenses to cost of goods sold or inventory items. Variable definitions: OC="cost of goods sold" item in the income statement divided by the average total assets. Delta INV =the difference between the net inventory at the end of the period and the net inventory at the beginning of the period, scaled by average total assets.

OCFO="other cash paid related to operating activities" less the increase amount of other account receivable plus the increase amount of other payables in this period and then scaled by the average total assets. STATE is a dummy variable that identifies whether a listed company is a state-owned company. If the company is a state-owned company, the value is 1, otherwise the value is 0. REG is a dummy variable that indicates whether the government implements policy intervention. If fiscal year is after the implementation of the regulation in December 2012 then its value is 1, otherwise its value is 0. Size=natural log of the company's core business income. The variables are winsorized at the 1% and 99% percentiles to deal with outliers. Clustered T-statistics are in parentheses.

*,**,***indicate significance at 10%,5%,and 1%(two-sided),respectively.

Dependent Variables	(1)	(2)
	OC	DeltaINV
Intercept	-0.015	0.080***
	(-0.57)	(2.65)
OCFO	0.143***	0.052**
	(7.00)	(2.23)
STATE	0.030	-0.211***
	(0.61)	(-3.76)
REG	0.103**	-0.040
	(2.38)	(-0.81)
STATE*REG	-0.118*	0.035
	(-1.75)	(0.45)
OCFO*STATE	0.032	0.563
	(0.08)	(1.19)
OCFO*REG	-1.265***	-0.061
	(-3.41)	(-0.14)
OCFO*STATE*REG	1.283**	0.815
	(2.09)	(1.15)
SIZE	0.484***	0.074***
	(35.32)	(4.72)
Observations	4,468	4,468
R-squared	0.252	0.016

4.4. Robustness check

When we read the cash flow statement, the expenses for repair and maintenance, rental expenses, other expenses paid, etc., which are paid out listed under the item "other cash paid related to operating activities". Part of the expenses is related to the production activities (mainly included in the manufacturing expenses), and this part of the cash expenditure does not belong to the consumption cash expenditure. However, such cash expenditures are difficult to observe directly. Since the cash expenditures associated with manufacturing costs are highly correlated with the size of the material purchases by the firm, we run the regression OCFO on the cash expenditures (PURCHASE) for the purchase of raw materials, goods and services, and then use regression residuals (REOCFO) as a proxy variable for consumption cash expenditure. Specifically, hypothesis 1 and hypothesis 2 are re-examined.

Table 5 reports the results of the regression of REOCFO as a proxy variable for consumption cash expenditures. The regression results in column 1 of Table 5 show that the coefficients of REOCFO * STATE * REG are significantly negative (-0.093, p <0.05) when the dependent variable is the sum of selling expenses and administrative expenses. The third column of the regression shows that the coefficient of REOCFO * STATE * REG is significantly positive (0.083, p <10%) when the dependent variable is the inventory change (Delta INV). This shows that after the introduction of the government regulation, state-owned enterprises reduced the ratio of consumption cash expenses to current expenses, but shift consumption expenditures in cash upwardly that should be classified as selling or administrative expenses to cost of goods sold or inventory items in the current period. The results are in good agreement with the results in Tables 3 and 4, which supports the hypothesis.

Table 5

The table reports regression results using REOCFO as the independent variable.

Variable definitions: EXPENDITURE= the sum of selling expenses and administrative expenses divided by the average assets. OC="cost of goods sold" item in the income statement divided by the average total assets. Delta INV =the difference between the net inventory at the end of the period and the net inventory at the beginning of the period, scaled by average total assets. REOCFO as a proxy variable for consumption cash expenditure is the regression residuals of OCFO on the cash expenditures (PURCHASE) for the purchase of raw materials, goods and services. STATE is a dummy variable that identifies whether a listed company is a state-owned company. If the company is a state-owned company, the value is 1, otherwise the value is 0. REG is a dummy variable that indicates whether the government implements policy intervention. If fiscal year is after the implementation of the regulation in December 2012 then its value is 1, otherwise its value is 0. COMPENSATION=cash paid to and for employees disclosed in cash flow statement. PPE =net fixed assets. Size=natural log of the company's core business income. The variables are winsorized at the 1% and 99% percentiles to deal with outliers.*,**,***indicate significance at 10%,5%,and 1%(two-sided),respectively.

Dependent Variables	(1) EXPENDITURE	(2) OC	(3) DeltaINV
Intercept	0.017 （1.00）	-3.084*** (-32.71)	-0.078*** (-5.34)
REOCFO	0.393*** (17.16)	0.477*** (3.10)	0.059** (2.47)
STATE	-0.011*** (-2.95)	-0.062** (-2.56)	-0.019*** (-5.21)
REG	-0.002 (-0.56)	-0.035 (-1.61)	-0.017*** (-5.08)
STATE*REG	0.002 (0.50)	-0.048 (-1.52)	0.004 (0.86)
REOCFO*STATE	0.009 (0.27)	0.340 (1.54)	0.052 (1.52)
REOCFO*REG	0.075** (2.45)	-0.379* (-1.84)	-0.034 (-1.08)
REOCFO*STATE*REG	-0.093** (-2.07)	0.239 (0.79)	0.083* (1.79)
SIZE	0.002*** (3.03)	0.173*** (38.49)	0.006*** (7.95)
COMPENSATION	0.000*** (15.54)		
PPE	-0.000*** (-13.93)		
Observations	4,468	4,468	4468
R-squared	0.286	0.268	0.041

5. Conclusion

With the implementation of the government regulation on December 4, 2012, it has aroused great attention on public consumption activities. We examine whether state-owned enterprises have the incentive to reduce the proportion of consumption expenditures in cash coming into operating expenses in the period after the government regulation and make misclassification of items within income statement. We use the non-state-owned enterprises as the control group to construct Differences-in-Differences (DID) estimation. We find that after the implementation of the government regulation, the consumption expenditure ratio of the state-owned enterprises has decreased significantly. At the same time, we find a strong tendency for managers to shift expenses upwardly into inventory an item, which indicates that state-owned enterprises are likely to be manipulated through cost classification, partly circumventing the regulation of on-the-job consumption.

These findings are informative to regulators, and auditors who are interested in the specific accounts and accounting methods that firms use to manage earnings.

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