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ABSTRACT

This study examines the effect of a government subsidy's purpose on firm performance. Using a sample of Chinese listed firms from 2007 to 2012, we find that a government subsidy affects firm performance. Specifically, a government subsidy is negatively associated with firm performance, and such a negative effect is primarily driven by a non-specified type of subsidy. Further, such an effect is more pronounced for state-owned enterprises (SOEs) compared with non-SOEs. The government quality has a positive effect on the likelihood of a specified subsidy and the performance impact of a non-specified subsidy. Further analyses suggest that a non-specified subsidy reduces investment efficiency and results in rent-seeking activities. This study sheds light on the effect of government subsidies from a new perspective, and has important policy implications for regulators to improve the effectiveness of government subsidies.

1. Introduction

The relationships between government and enterprises and their impact on economic efficiency are issues of economic interest. The third Plenary Session of the 18th CPC Central Committee pointed out that 'the core problem of economic system reform is to the relationship between government and market. The market should play a decisive role in the distribution of resources and the government should make up for inadequacy of market regulation'.[1] A government subsidy, provided to achieve established political and economic goals, is an important tool by which government may participate in the market economy and carry out a macroeconomic readjustment. A government subsidy shows the relationship between the government and the market. On one hand, it has become more common in China for listed firms to receive government subsidies. In the period 2007–2012, the total amount of subsidies for the listed firms increased almost four times, from 281.13 billion yuan

[1]In order to implement the strategic planning adopted at the 18th National Congress of the Communist Party of China, the Third Plenary Session of the 18th Central Committee of the Communist Party of China discussed some major issues concerning deepening the reform comprehensively, and made some decisions. One important decision is economic system reform. (From Xinhua Net http://news.xinhuanet.com/2013-11/15/c_118164235.htm.)

in 2007, up to 1100.19 billion yuan in 2012. The total amount of government subsidy of listed firms as a percentage of overall fiscal expenditure rose from 0.26% in 2007 to 0.65% in 2012; the number of listed firms receiving government subsidies increased by 119%, from 974 in 2007 to 2244 in 2012. In 2011, 90.16% of all A-shares listed firms received government subsidies. Among the aims of government subsidies are to improve the competitive environment of the market; support the development of enterprises; and safeguard the interests of local enterprises (Eaton & Grossman, 1986; Kiyotaki, 1988), but Chinese government subsidies that are given to listed firms lack a definite intention. Through the analysis of notes to the annual statement of the listed firms, we find that there are as many as 395 types of subsidy, including the industry development fund, enterprise support fund, value-added tax rebates, bank interest rate relief, R&D subsidies, and relocation subsidies. Great differences exist in the aims of subsidies in different categories. While there is no clear purpose when the government supplies an industry development fund, enterprise support funds or similar funds to listed firms, value-added tax rebates, R&D subsidies and relocation subsidies have clear purposes and constraint conditions. The number of listed firms that received subsidies that had definite purposes dropped from 366 in 2007 to 245 in 2012. In contrast, the number of listed firms that received subsidies with no defined purpose increased from 608 in 2007 to 1999 in 2012. The total amount of subsidies rose from 169.42 billion yuan in 2007 to 987.92 billion yuan in 2012, and subsidies without definite purposes reached 89.80% of the total government subsidies in 2012.

A government subsidy, as an important tool of macroeconomic readjustment and control, has a significant impact on the capital market and listed firms. For economic purposes, the government subsidy is intended to support the development of the industry (Aydin, 2007; Gerd & Benedict, 1999; Robert & Wim, 1990; Wang & Chen, 2005), and to stimulate the R&D activities of enterprises (Gerd & Benedict, 1999; Robert & Wim, 1990). For political purposes, a government subsidy is intended to increase employment and provide public services (Eckaus, 2006; Shleifer & Vishny, 1994; Tang & Luo, 2007; Wren & Waterson, 1991). In addition, a government subsidy is also intended for market-based reasons such as refinancing, or avoiding delisting (Aharony, Lee, & Wong, 2000; Chen & Zhu, 2009; Cheng & Li, 2001). A government subsidy may not only be 'the helping hand', but also 'the grabbing hand' (Frye & Shleifer, 1997). Prior studies have provided evidence from economic performance, social effect, R&D efficiency, and export behaviour (Bergstrom, 2000; Dever, 2008; Faccio, Masulis, & McConnell, 2006; Pan, Dai, & Li, 2009) . It has been shown that government subsidies could make funds deviate from the purpose of maximising value by changing the market principle of the allocation of funds. Some literature shows that government subsidies can effectively promote the R&D level in the enterprise (Chen & Zhu, 2008; Hu, 2001), and An, Zhou, and Pi (2009), Samuelson and Nordhaus (1992), and Zhu and Xu (2003) find that government subsidies cannot effectively improve the enterprise's R&D and innovation ability. Su, Hong, and Liu (2012) find that productive subsidies have a positive effect on export behaviour of Chinese manufacturing enterprises, and Zhang, Liu, and Zheng (2013) further show that government subsidies restrain the high value-added rate of the export enterprises,[2] Ren and Zhang (2013) find that the subsidy increases the cost of rent-seeking for enterprises, which in turn reduces the mark-up ratio in those enterprises.

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[2]Value added rate is a concept of the national economic accounting system. It equals total output minus intermediate input, divided by total output. The higher the value added rate, the more effective the input–output relationship.

Before 1994, China was a regulated fiscal regime, the collection of all taxes and profits were remitted to the central government and then transferred back to the provinces according to expenditure needs approved by central government. The fiscal regime resulted in an equal fiscal capacity among regions. This meant that the local governments had no incentives to develop their local economies, and were inefficient in development, because of a lack of sufficient fiscal autonomy, which became one of the starting points of the economic reform. After the reform of fiscal decentralisation in 1994, the central government adopted the GDP growth rate, employment, tax and other economic indicators to evaluate the local governors (Zhou, 2004, 2007), so that the local government officials' promotion becomes a kind of championship tournament as a 'zero sum game' (Niskanen, 1971). Local governors, who have the power to dominate fiscal revenue and the rights of control and sharing over economic surplus, become the real economic residual claimants and controllers under the jurisdiction of local government. They have a motivation to invest in infrastructure and this motivation may lead to distortions of local government expenditure structure through experiencing low efficiency where there is overinvestment (Fu & Zhang, 2007; Zhang, Gao, Fu & Zhang, 2007). Because there are few explicit laws and regulations regarding the object, the procedure, the form and the purpose of government subsidies, there is a lack of effective supervision for the distribution and use of funds. Local governments are found to use financial subsidies to support local enterprises to earn more political achievements and enhance officials' competitiveness (Cheng & Li, 2001; Qian & Weingast, 1997; Qiao, Fan, & Peng, 2006; Zhou, 2007; Zhou & Zhao, 2002). Local government intervenes in business decisions and enterprise resource allocation by means of subsidies, taxation and supervision (Fan, Wei, & Xu, 2011). This means that both the government behaviour and the enterprise behaviour may be decided by the quality of governance in central and local government. The quality of government in an emerging market has become the key factor that affects the behaviour of the government (Fan et al., 2011). On the one hand, higher quality government can enforce efficient laws, maintain order, keep the economy stable, help the implementation of better protection of property rights, and supply public services with good quality (Hellman, Jones, Kaufmann, & Schankerman, 2000). On the other hand, it can standardise enterprise information disclosure, reduce information asymmetry in the capital market, make investment more sensitive to Tobin Q value (Chen, Li, & Zhong, 2012), and guide the efficient allocation of inter-industry capital (Wurgler, 2000).

In this scenario, how do government subsidies make up for the deficiency of market readjustment becoming more and more common in listed firms? Should the government define the purpose of grants in accordance with its goal of macroeconomic control? What is the impact of government quality on the allocation efficiency of government subsidies? However, prior studies on government subsidies regard government subsidies as a whole, and do not combine with the heterogeneity of government subsidies purposes to evaluate the allocation efficiency, which may reduce the depth of analysis in the conclusion to some extent. We take advantage of the unique characteristics of government subsidies in China. To answer the above questions, using 10,130 samples of China listed firms from 2007 to 2012, this article examines the impact of the subsidies with different purposes on accounting performance. The study finds that the purpose of a subsidy affects the efficiency of the subsidy, and a subsidy having a definite purpose is more efficient than a subsidy without a definite purpose. Specifically, a subsidy without a definite purpose has a significantly negative effect on corporate accounting performance, while a subsidy with a definite purpose

has an insignificant effect on corporate performance. Comparing non-state-owned-enterprises (SOEs), a subsidy without a definite purpose in an SOE a has lower efficiency. Our study finds that the government quality has a positive effect on the extent to which the purposes of subsidies are defined and on the efficiency of subsidies whose purposes are unclear. Furthermore, the mechanism of low efficiency of those subsidies without definite purposes is that the subsidy without a definite purpose would decrease the investment efficiency and increase the rent-seeking cost. This shows that, in China, the efficiency of a subsidy is limited by the purpose of the subsidy. The efficiency of a subsidy with a definite purpose is significantly higher than the efficiency of a subsidy without a definite purpose. Consequently, we recommend that a subsidy should have a definite purpose when the government gives it to a listed firm.

The contributions of this paper are as follows. First, based on the perspective of subsidy heterogeneity, this paper defines the categories of subsidies, shows that the definition of the purpose of a subsidy has an effect on the efficiency of its allocation, and helps us to understand and evaluate the efficiency of the allocation of subsidies. Second, based on the analysis of the differences in efficiency of subsidies allocated with different purposes, this paper reveals the mechanism of low efficiency of subsidies without definite purposes, and provides an explanation for the understanding of the allocation efficiency of subsidies. Third, this paper provides empirical evidence for regulators on how to improve the efficiency of subsidies and safeguard the efficiency of the allocation of resources. The conclusion of the study has an important policy implication for local officials when they implement policies to ensure the effectiveness of the government's macro-economic regulation and control.

The rest of the paper is organised as follows. Section 2 discusses the institutional environment and the development of our hypotheses. Section 3 introduces our data and models. Section 4 presents our main empirical results and discussion. We run further analyses in Section 5, and conclude in Section 6.

2. Institutional background and hypothesis development

2.1. Institutional background

The fiscal decentralisation reform in China that began in the 1970s has provided local governments with financial power (Zhou, 2008). It stimulates the enthusiasm of local governments to develop the local economy (Lin & Liu, 2000), and changes them from the 'night watchman' to 'entrepreneurs' (Wu, 2007). At the same time, it also leads to 'information asymmetry' between the central government and local government. The Chinese government at a higher level can easily check the performance of local government by economic indicators (Zhou, 2008). Therefore, the principal-agent relationship between the central government and local government based in the system of fiscal decentralisation and political centralisation, gives local governments a strong motivation to achieve political promotion through district economy development (Zhou, 2007). In a political tournament, where higher GDP is the measure of success, government officials take part in an achievement competition that is characterised by economic growth, while macroeconomic growth depends on the micro enterprises within their respective jurisdictions (Li & Zhou, 2005; Zhou, 2007). Tax contributions and the profit growth of enterprises not only directly determine regional GDP and fiscal revenue growth, but also improve the environment for enterprise development

through the local government's input of the increasing fiscal revenue into public facilities (Zhou, 2004, 2008). However, because of the difference in resources endowment, the competition for limited resources makes local governments more active (Zhou, 2007, 2008). Local economic development has a strong influence on employment, local finance and the promotion of local officials, so that local government has a strong preference for enterprises (Lin & Liu, 2000; Liu, 2011; Zhou, 2008). To maximise their interests, local governments have an incentive to increase financial subsidies for enterprises (Sun, 2000). Local government subsidies can significantly promote regional investment growth, and massive investment in a short period of time will make regional economic gross rapidly increase in turn. Therefore, local governments have an incentive to provide enterprises within their jurisdiction with various forms of support to promote the region economic growth (Tang & Luo, 2007).

2.2. Hypothesis development

As an important means of macroeconomic control, theoretically a subsidy ought to have specific original intentions, together with some limits of policy or usage when given to listed firms. In reality, however, China's fiscal decentralisation reform has provided strong economic autonomy and discretionary powers of fiscal expenditures for local government. There are no definite laws or regulations to restrain and restrict the fiscal subsidy expenditures of local government. As a result, local government officials possess strong discretion when deciding to offer subsidies to a certain enterprise. First, there is information asymmetry when the governments select subsidy objects, such as the object's production technology, commodity market, development potential, profitability, job creation, or potential taxable capacity. Asymmetric information can lead to higher costs for the government in identifying which firms should receive a subsidy, and can lead to adverse selection of enterprises, which may seriously hamper the incentive effects of any subsidy (An, Zhou, & Pi, 2009). If the government cannot have complete information concerning the industry, in order to examine which industry may create maximum knowledge from R&D activities (Rodrik, 2004), then the secondary innovative enterprises are inclined to release false signals for subsidy when it is costly for the government to distinguish original innovation of an enterprise from secondary innovation, which may act 'adversely' as a disincentive for a subsidy on original innovation (An, Zhou, & Pi, 2009). Secondly, since Kornai (1986) proposed the concept of soft budget constraint based on paternalism of the socialist government, it has been widely believed by scholars that the root cause of the formation of a soft budget constraint is that the enterprises have undertaken the policy burden. When enterprises bear the policy burden, such as excess employment, leading to exceeding their income, the local government has a strong incentive to carry out its protective measures on them, such as tax preference and fiscal subsidy, and that may induce a weakness or lack of the internal dynamical mechanism for making profits by improving their technology innovation abilities and establishing brands, and then impact their operating efficiency, thus distorting economic behaviour and giving rise to inefficiency of resource allocation (Guo & Du, 2011; Lin & Li, 2004; Shleifer & Vishny, 1994; Tian, 2005). Third, subsidies that the government offers to enterprises through fiscal expenditures is based on rent-seeking activities between the officials and entrepreneurs, rather than to increase the efficiency of both enterprises and social resource distribution. Officials have a strong incentive to seek rent from entrepreneurs for the sake of political performance evaluation or political promotion, such as requiring the enterprises to hire far more employees

than the production demands and to pay wages above the average level (Yang & Yang, 2010), then they offer subsidies to the enterprises in return. In addition, government officials may even deliberately obfuscate and randomise criteria for the granting of subsidies, thus providing more discretion for rent setting by officials and rent seeking of enterprises.

From the perspective of enterprises, because of the lack of any mechanism for screening signals, they can secure subsidies by releasing spurious signals in the process of claiming subsidies (An et al., 2009), which could discount the allocation efficiency of subsidies. As for an imperfect system, the more discretion the officials have over offering subsidies to enterprises, the more difficult to supervise the enterprises who obtain subsidies from rent-seeking. (Yu, Hui, & Pan, 2010). Local governments use subsidies to raise the speed of economic growth in their local area (Zhou, 2007) to get benefits from vicious competition among local governments by rent-seeking (Bu & Huang, 2013; Morck, Wolfenzon, & Yeung, 2005). Subsidies may distort the investment behaviour of enterprises leading to over-investment, thus resulting in overcapacity (Jiang, Geng, Lv, & Li, 2012). They also intensify malignant price competition in the industry and reduce the allocation efficiency of subsidies. Meanwhile, rent-seeking activities may produce an inhibitory effect on enterprises' motivation for making profits by boosting productivity and accelerating innovation, and then have a negative effect on the sustainable development of the enterprises (Zhang et al., 2013).

Above all, the strong economic autonomy and discretionary power of local governments who control the subsidies can distort the behaviour of both governments and enterprises, and discount the allocation efficiency of subsidies. As for a subsidy with a definite purpose, however, both SOEs and non-SOEs must reach a certain criterion to obtain the subsidy due to the specific conditions and purposes of subsidies prescribed by the laws and regulations along with a strict subsequent supervision mechanism. For example, rent subsidies are allocated when the government occupies the land of listed firms; in addition, listed firms must reach certain criteria to enjoy favourable outcomes such as financing incentives, or credit subsidies. Defining the purpose of a subsidy and increasing the constraint conditions of a government subsidy favour reducing the probability of the subsidy being distorted in its actual use. Compared with a subsidy without a definite purpose, a subsidy with a definite purpose has an explicit intention, more strict application criteria as well as subsequent supervision and, as a result, there is a smaller profit-manipulating room for executives when enjoying subsidies with tight constraints (Bu & Wang, 2014), thus ensuring the allocation efficiency of subsidies. However, there may be a deficiency in the policy and mechanism of acquisition of a subsidy without a definite purpose based on the soft budget constraints of government and collusion between local governments and firms (Nie & Li, 2007). For instance, there are no strict application criteria on obtaining a subsidy without a definite purpose; the method of obtaining the subsidy and the amount of subsidy are susceptible to factors such as the property nature of an enterprise (Bu & Yu, 2012; Du, Guo, & Lei, 2009) or political connection (Chen, 2003; Faccio et al., 2006; Yu et al., 2010). Furthermore, there is high moral hazard in enterprises due to information asymmetry and lack of powerful means of supervision and punishment mechanism on the procedures of a subsidy without a definite purpose, which raises the possibility of this type of subsidy being actually used in different ways, and harms the efficiency of resource distribution of a subsidy without a definite purpose, which in turn becomes a 'grabbing hand' (Frye & Shleifer, 1997). Thus, we propose our first hypothesis:

H1: The efficiency of a subsidy is subject to its original intention, and the allocation efficiency of a subsidy without a definite purpose is significantly lower than that of a subsidy with a definite purpose.

Compared with a subsidy with a definite purpose, the requirements and purposes of subsidies are relatively fuzzy when a government offers subsidies without a definite purpose to listed firms. In addition, government officials may have higher discretionary power for the objects of subsidies because of the lack of explicit legal rules with regard to the objects, amounts and forms. The inherent political affiliation and the nature of property rights of SOEs makes them communicate with government more effectively, thus it is easier to obtain more subsidies without definite purposes (Yu et al., 2010). Furthermore, based on the soft budget constraint theory, the policy burden carried by SOEs helps to strengthen their bargaining ability with the government in a transitional economy. The most advantageous strengths owned by SOEs allow them to obtain a subsidy without a definite purpose more easily in informal ways than non-SOEs, and without definite intentions or application criteria (Bu & Wang, 2014). As a result, the behaviour of governments changes the market principles of fund allocation. The use of funds then deviates from value maximisation, which ultimately results in inefficient configuration of the social fund and a waste of social resources (Chen, 2003; Pan et al., 2009; Yu et al., 2010).

Non-SOEs experience more difficulties and restrictive conditions in the acquisition of a subsidy than SOEs, especially for a subsidy without a definite purpose. It can be seen from Table 4 later that the amount of subsidy with a definite purpose obtained by SOEs accounts for only 20% of their total subsidies, and it accounts for 40% in the case of non-SOEs. At the same time, non-SOEs may confront more political intervention (Yu et al., 2010) and social responsibilities in the acquisition of a subsidy (Du et al., 2009; Lin & Li, 2004; Tang & Luo, 2007; Wren & Waterson, 1991), and the policy burden under government intervention can control the flow of a subsidy. In consequence, we hold the opinion that even though non-SOEs have obtained a subsidy without a definite purpose, they are inclined to accomplish their relative responsibilities under the government's control on account of government intervention and social responsibilities, and ensure the efficiency of the subsidy. Because the operating efficiency of SOEs is significantly worse than that of non-SOEs (Liu, 2000; Liu 2011; Wu, 2012), the non-SOEs show higher efficiency from a subsidy without a definite purpose than the SOEs when they obtain the same kind of subsidy. Thus, we propose our second hypothesis:

H2: The allocation efficiency of a subsidy without a definite purpose is lower in SOEs than in non-SOEs.

An essential factor affecting economic development during the transition in China's economy[3] is the efficiency and quality of the government. The government can interfere in the operating decisions of enterprises through measures such as taxation, supervision, and approval. Especially in emerging markets, the government may significantly affect the enterprises' resource allocation by controlling natural resources, human resources and financial capital (Fan et al., 2011; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999; Shleifer & Vishny, 1994;

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[3]The transition economy is an economy that is changing from a centrally planned economy to a market economy. Before 1992, China was in the era of a planned economy and many decisions were made by the central government. In 1992, the 14th National Congress of the Communist Party of China put forward the new goal, which was to establish the socialist market economy. Now, China is in transition from a planned economy to a market economy.

Shleifer & Vishny, 1998), resulting in enterprise behaviour reflecting the governance quality of the government (Chen et al., 2012). The quality of government is mainly manifest in maintaining law and order, retaining stability and the development of the macro-economy, and providing infrastructure as well as a tax administrative system (Hellman et al., 2000). High quality government can improve the government's public governance mechanism, such as intellectual property rights protection and the efficiency of administration, increase market efficiency and reduce the extent of administrative intervention (Chen, Li, Xiao, & Zou, 2014). As a significant aspect of the corporate governance mechanism affecting economic efficiency, local government quality can not only influence the government's initiative on developing the regional economy, but can also use achievement inspection indicators based on a developing economy and maintaining stability to strengthen its motivation and ability to affect business operations by providing public governance (Chen et al., 2012; Chen et al., 2014).

In China, the different types of government can influence the purpose and efficiency of a subsidy, especially a subsidy without a definite purpose. To a certain extent, a subsidy can be viewed as capital invested in enterprises, and the higher is the government quality, the better is its governance level and the more adequate the decision-making and supervision. Even though, in a transition economy, the local governments hold strong economic autonomy and have discretionary power over fiscal expenditures, a high-quality government is inclined to maintain law and order due to having undertaken the responsibility of boosting a local economy. Then they would standardise approaches and the procedures of the issuance of subsidy and establish a perfect mechanism of supervision, and consequently help make government expenditure meet the evaluation index of government performance in developing the economy and maintaining stability. In those regions with high government quality, the more normative the approaches and procedures of subsidy offered to listed firms, the less likely it is that the enterprises utilise abnormal approaches such as political affiliation and the nature of property rights to obtain a subsidy, and the less the possibility of enterprises seeking rent and collusion between local governments and firms, thereby increasing the allocation efficiency of a subsidy (Yu et al., 2010).

In the case of a subsidy without a definite purpose being obtained by listed firms, people have higher expectations of the contribution of the subsidy to economic development due to high local government quality with a higher motivation to develop the economy. The addition of higher administrative efficiency, accompanied by a stricter follow-up supervision mechanism, results in reducing the risk of the subsidy being distorted. Meanwhile, government quality has dramatic effects on the structure of an organisation, corporate governance and information transparency of enterprises (Fan, Rui, & Zhao, 2008; Jiang, Lee, & Yue, 2010; Leuz & Oberholzer-Gee, 2006). A government having high quality can enforce contracts to improve economic efficiency through offering better property protection mechanisms, and efficient law enforcement as well as high-quality public services. When subsidies are given to listed firms, the resource allocation function of market mechanisms can be given full play under the promotion of government with high quality, and decrease opportunistic behaviour while increasing the investment allocation efficiency of enterprises accordingly (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000, 2002). Therefore high government quality can raise the efficiency of subsidies with an unclear purpose. Thus, we propose our third hypothesis:

H3: High government quality contributes to a low proportion, and high allocation efficiency, of subsidies that do not have a definite purpose.

3. Research design

3.1. Data and sample

Under Chinese Accounting Standards, since 2007, there has been a specific item for Government subsidies in the financial statements of Chinese listed firms. Due to the availability of data from 2007, this article selects listed firms in the Chinese A-share market from 2007 to 2012. Because of the particular nature of financial listed firms, we remove those observations. Meanwhile, the Sinopec Group (600028), Petro China Co Ltd (601857), Sinopec Shanghai Petrochemical Company Limited (600688) and Shenzhen Nanshan Power Company Limited (000037) obtained 70.56 billion yuan gasoline subsidies,[4] which account for 69.83% of total subsidies. Based on the unique nature of these firms, we exclude the listed firms that have gasoline subsidies. Additionally, with the exclusion of firms whose government subsidy and other data are missing, the paper finally observes a sample of 10,130 firms. In this paper, while the variables related to government grants are collected by hand, other variables are derived from the CSMAR database. All continuous variables are winsorised at 1% and 99%.

3.2. Model

We estimate the following equation to test the three hypotheses:

$$ROE = \beta_1 Susbidy + Control\ Variable + \varepsilon \tag{1}$$

In Equation (1) we define the variables as follows.

(1) Dependent variable: *Performance (ROE)*
Following Guo and Du (2011), we use performance to measure the subsidy efficiency of firms. There are two ways to measure performance, one is the accounting performance, and the other is the market performance. Accounting performance is largely affected by the internal behaviour of the firm. Market performance is regarded as the feedback from the external investors. Because there are more speculative factors in China's capital market, using a market performance indicator has greater noise. Consequently we use accounting performance to measure the subsidy efficiency.

In order to measure the impact of government subsidy efficiency accurately by using the firm's performance, we use the adjusted net profit margin of *ROE*, the rate of return on stockholders' equity. Meanwhile, we use *ROA* as an alternative variable in the robustness test.

(2) Independent variable: *Subsidy*
In this paper, Government grants (*Susbidy*) is the main independent variable, and then we take the natural logarithm to address the right skewness of the data. We divide government subsidies into clear-intention subsidy (*Clear_subsidy*) and unclear-intention subsidy (*Unclear_subsidy*) according to whether or not the subsidy has a definite purpose. The clear-intention subsidies are those whose purposes and conditions are explicitly stipulated by the state, such as listed firms should obtain employment subsidies according to *Ministry of Finance, State Administration of Taxation on re-employment of laid-off workers on tax policy issues*

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[4]In order to make up for the phenomenon that domestic refined oil price is lower than crude price, and to protect domestic product oil and crude oil market supply, the government provides subsidies.

notice.[5] Listed firms obtain credit subsidies under the *import discount capital management approach*.[6] According to the *National Development Bank, the Ministry of Science and Technology for Innovative Pilot Enterprises to Focus Financial Support Notice* in 2007, listed companies receive the new technology subsidies or other government grants for a clear purpose. For example, in 2007, China Unicom (stock code: 600050) obtained reinvestment tax rebates of 2.78 billion yuan. In 2010, Gree Electric Appliances (stock code: 000651) acquired new technology grants of 2.15 billion yuan. In 2011, ZTE Corporation (stock code: 000063) received tax subsidies of 15.97 billion yuan.

Compared with government subsidies with a clear purpose, there are no constraint conditions on subsidies with an unclear purpose, and firms can decide how to use them. For example, the government will give out a subsidy supporting an industry. But these subsidies do not have constraint conditions. We allocate these subsidies to the unclear kind. The unclear (hereafter UNC) and clear subsides (hereafter CLEAR) are collected by hand.

(3) Moderator variable: *Government quality*

This paper uses data from the World Development Report 2006 (World Bank, 2006) in four dimensions to measure the quality of local government, including the level of protection of property rights (*GQI_ppt*), local business confidence in the court (*GQI_cnt*), business entertainment expenses (*GQI_ent*) and time of business spending with the government (*GQI_int*). The greater level of protection of property rights and the bigger local business confidence mean higher quality of government. The greater business entertainment expenses and the more time of enterprise spending with government indicate worse government quality. The government quality data are from the World Development Report 2006 (World Bank, 2006) 'Governance, investment environment and harmonious society about the competiveness survey of 120 Chinese cities'. By integrating with listed company data, we choose the data of 116 cities.

For better understanding, we normalise the four partial indices of the government quality. For the positive government quality measure, we standardise them according to the formula $(X_i - X_{min})/(X_{max} - X_{min})$. For the negative government quality measure, we standardise them according to the formula $(X_{max} - X_i)/(X_{max} - X_{min})$. After standardisation, the indicators are converted into values between 0 and 1. The higher the value, the higher the quality of government. After standardisation, we used the average value of each partial index to measure the comprehensive government quality. A higher comprehensive government quality index means that local governments are of better quality.

(4) Control variables

Based on prior studies, we include the following control variables: (1) *SOE*: *SOE* is a dummy variable, equal to 1 when a firm is a state-owned enterprise whose ultimate controller is central government or local government, and zero otherwise. (2) *Share*: *Share* is the stock proportion held by management. (3) *Size*: *Size* is the natural logarithm of total assets. (4) *Leverage*: *Leverage*

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[5]In 2005, Ministry of Finance, State Administration of Taxation of the People's Republic of China released a document that more tax policies were given to enterprises to re-employ laid-off workers. Pease see http://www.chinatax.gov.cn/n810341/n810765/n812183/n812876/c1198216/content.html.

[6]In 2007, Ministry of Finance of the People's Republic of China released a document that import enterprises could apply for discount government loan. Please see http://www.mof.gov.cn/zhengwuxinxi/caizhengwengao/caizhengbuwengao2007/caizhengbuwengao200712/200805/t20080519_28777.html.

Table 1. Variable definitions.

Variable	Definitions
Performance	The Performance = (Net profit − government grants) × 100/total amount of owner's equity.
Subsidy	The natural logarithm of the amount of government subsidies.
Unclear_subsidy	The original intention of the government subsidy is not clear. If there is not a constraint condition on subsidy when it is offered by government, it is classified to unclear subsidy. This category Includes enterprise development fund, the fund industry, business support funds.
Clear_subsidy	Original intention of government subsidies is explicit. Subsidies for which the State has expressly provided the conditions and purposes of a subsidy through government grants. This category includes subsidies providing resources for new technologies, tax subsidies, agricultural subsidies, rent subsidies, credit subsidies, export subsidies, public subsidies and IPO subsidies.
Size	The natural logarithm of the firm's total assets at the end of the year.
SOE	SOE is a dummy variable, equal to 1 when a firm's ultimate controller is the central government or local governments, and zero otherwise.
Leverage	Debt-to-asset ratio= total debt/ total assets.
Growth	The growth rate of revenue.
Share	Share is the stock proportion held by management.
Management_cost	Management_cost is the natural logarithm of the management fees.
Asset_turnover	Asset_turnover = sales / total assets
Industry	Industry dummy variable.
Year	Year dummy variable.

is the ratio of total debt to total assets. (5) *Growth*: *Growth* is annual growth ratio of operating income. (6) *Management_cost*: *Management_cost* is the natural logarithm of the administration fees. Higher enterprise management cost may come with higher rent-seeking cost. Then government subsidies obtained through rent-seeking may also become higher. Meanwhile, following prior literature, we also control the total assets turnover rate (*Turnover*), whether the chairman is also the CEO (*Dual*), industry variable (*Industry*) and year variable (*Year*). Detailed explanations of the variables in the paper are provided in Table 1.

4. Results

4.1. The analysis of subsidy

According to the differences in the original intention of the government grants, government subsidies are divided into clear and unclear. Table 2 reports the distribution of subsidies from 2007 to 2012.

Table 2 shows that the total amount of government subsidies received by listed firms is 430 billion yuan from 2007 to 2012. Listed firms received government subsidies of 28.13 billion yuan in 2007, receiving 101.04, 42.32, 63.70, 84.88, 110.02 billion yuan respectively in the following five years. The total amount of government subsidies received by listed firms ranges from 281.31 billion yuan in 2007 up to 1100.19 billion yuan in 2012. During the six years, government subsidies continued to increase. The maximum government grant was in 2008. It was 3.85 times that of 2007 and nearly double that of 2010.

In 2007, listed firms received 16.94 billion yuan's *Unclear_Subsidy*, accounting for 60.22% of the total amount of government subsidies. In 2008 they received 14.30 billion yuan's *Unclear_Subsidy*, accounting for 44.35% (the total amount of government subsidies excluded gasoline subsidies). In 2009 they received 36.33 billion yuan's *Unclear_Subsidy*, accounting for 86.08%. In 2010 they received 55.73 billion yuan's *Unclear_Subsidy*, accounting for 87.62%. In 2011 they received 77.75 billion yuan's *Unclear_Subsidy*, accounting for 91.60%. In 2012

Table 2. The analysis of subsidy by year and purpose.

Subsidy	2007	2008	2009	2010	2011	2012	Total
Unclear_subsidy	16.94	13.52	36.43	55.73	77.75	98.79	299.16
Clear_subsidy	11.19	87.52	5.89	7.87	7.13	11.23	130.83
New technology	2.41	4.49	1.79	2.60	2.17	0.20	13.65
Tax	4.80	3.94	2.17	2.69	1.96	6.24	21.79
Resources	2.86	5.83	1.05	0.82	0.70	0.31	11.57
Credit	0.31	0.70	0.20	0.78	0.56	0.56	3.12
Others	0.81	72.56	0.69	0.98	1.74	3.92	80.70
Total	28.13	101.04	42.32	63.60	84.88	110.02	429.99

Notes: This table reports the subsidy distribution by year between 2007 and 2012. The unit of subsidy is billions of Yuan.

Table 3. The difference test of subsidy.

Subsidy	High GQ	Low GQ	T-value	SOE	non-SOE	T-value
Unclear_subsidy	18.58	29.41	3.42***	31.17	11.32	−6.07***
Clear_subsidy	24.90	24.02	−0.15	25.66	22.37	−0.55
New technology	24.21	11.20	−1.58	11.82	27.45	1.87*
Tax	9.85	12.67	1.01	13.55	7.83	−2.02**
Resources	44.46	93.34	1.39	69.73	26.82	−0.77
Credit	1.85	8.73	2.97***	7.39	2.00	−2.24**
Others	2.50	2.79	0.26	2.86	2.21	−0.53

Notes: This table reports difference in means of subsidy in high government quality group v.s. low government quality group, and SOEs v.s. non-SOEs. The unit of subsidy is millions of Yuan. ***, **, and *, indicating statistical significance at 1%, 5%, and 10% levels respectively. All the variables are defined in Table 1.

they received 98.79 billion yuan's *Unclear_Subsidy*, accounting for the total amount of government subsidies, 89.80%. In 2008, the numbers of *Unclear_Subsidy* were the lowest, as for the financial crisis in 2008, more government subsidies tended to be in the category of *Clear_Subsidy*.

In addition, we compare the differences of subsidy between a high-quality regional government and a low-quality regional government, as well as the differences between the various listed companies in the property category. All of these are detailed in Table 3. *Unclear_Subsidy* mainly gathers in the areas of low quality. In the region of low-quality government, listed companies receive the *Unclear_Subsidy* for an average of 29.41 million yuan. In the region of high quality government, listed companies get the *Unclear_Subsidy* for an average of 185.78 million yuan. The *Unclear_Subsidy* in the region of low quality government is higher than that of high-quality regional government. For the *Clear_Subsidy* the level of quality of their government has no significant effect. Only for credit subsidies, it is significantly greater in a low-quality government region than in a high-quality government region. At the same time, we also find that the original intention of government subsidies are significantly different for the listed companies with a different property nature. The *Unclear_Subsidy* is concentrated in state-owned enterprises, while the nature of the property has no significant effect on the *Clear_Subsidy*.

4.2. Descriptive statistics

Table 4 presents the descriptive statistics of the main variables. It shows that the mean value of ROE is 0.06. Minimum and maximum values of ROE are −0.76 and 0.44, respectively. The mean values of *Subsidy*, *Unclear_Subsidy* and *Clear_Subsidy* are 15.56, 15.61 and 15.30, respectively.

Table 4. Descriptive statistics.

Variable	N	Mean	Minimum	Median	Maximum	Standard
ROE	10,130	0.06	−0.76	0.06	0.44	0.14
Subsidy	10,130	15.56	10.28	15.65	19.94	1.87
Unclear_subsidy	8397	15.61	10.28	15.71	19.94	1.84
Clear_subsidy	1733	15.30	10.28	15.38	19.94	1.98
Size	10,130	21.79	19.50	21.62	25.49	1.22
SOE	10,130	0.57	0.00	1.00	1.00	0.49
Leverage	10,130	0.48	0.05	0.49	1.04	0.21
Growth	10,130	0.23	−0.54	0.15	4.09	0.54
Share	10,130	0.04	0.00	0.00	0.53	0.10
Dual	10,130	0.19	0.00	0.00	1.00	0.40
Management_cost	10,130	18.54	16.31	18.41	22.04	1.12
Asset_turnover	10,130	0.76	0.09	0.64	2.93	0.52

Note: This table reports the descriptive statistics within the sample firms between 2007 and 2012. All variable definitions are in Table 1.

In the sample, the mean value of *Leverage* is 0.48. There are 57% of observations whose ultimate controllers are SOEs. The mean value of *Growth* is 0.23. There are 19% of observations in the sample whose chairman of the board and CEO are the same person. In addition, the average shares held by the executives is 0.04. The minimum and maximum values of *Share* are 0 and 0.53, respectively.

4.3. Results

4.3.1. Subsidy and performance

The regression results of government subsidy on the firm's accounting performance are shown in Table 5, which reports a significantly negative relationship between government subsidy and performance at the 1% level. Specifically, when government subsidy received by listed firms grows 1%, the company's accounting performance will be significantly weakened by 0.596%.

Furthermore, we analyse the relationship between subsidy and performance in SOEs and non-SOEs. For SOEs, government subsidy significantly reduces the firm's accounting performance. When the government subsidy to the state-owned enterprises grows by 1%, the accounting performance will significantly decrease by 0.777%. For non-SOEs, government subsidies acquired by listed firms have no significant negative impact on the accounting performance.

4.3.2. Purpose of a subsidy and performance

Table 6 reports the impact of the purpose of a government subsidy on firm's performance. From Table 6 it can be seen that the *Unclear_Subsidy* will significantly reduce the accounting performance, and as the *Unclear_Subsidy* increases by 1%, the accounting performance will significantly decrease by 0.702%. The *Clear_Subsidy* has no significant effect on the accounting performance. Specifically, it is visible that the efficiency of a government subsidy is subject to the clarity of the intention of government grants. For government subsidies with a strong constraint, the discretionary power by manager (Bu & Wang, 2014), which reduces the possibility of the *Clear_Subsidy* being distorted, thus ensuring the allocative efficiency

Table 5. Subsidy and performance.

	Full sample	SOE	N-SOE
Subsidy	−0.596***	−0.777***	−0.298
	(−4.62)	(−4.17)	(−0.92)
SOE	−2.742***		
	(−5.89)		
Leverage	−0.191***	−0.222***	−0.162***
	(−11.29)	(−8.62)	(−6.94)
Size	2.591***	2.529***	2.999***
	(5.86)	(4.09)	(4.31)
Share	0.064**	0.098**	0.065**
	(2.35)	(1.98)	(2.13)
Dual	−0.202	−1.405*	0.039
	(−0.47)	(−1.73)	(0.08)
Growth	4.031***	4.226***	3.821***
	(10.88)	(7.54)	(8.44)
Management_cost	0.759*	0.689	0.407
	(1.95)	(1.28)	(0.71)
Asset_turnover	4.706***	4.410***	4.976***
	(9.47)	(6.27)	(7.18)
Industry	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	10,130	5555	4575
Adj_R^2	0.176	0.177	0.185

Notes: This table reports the regression results of subsidy on performance. The dependent variable is *ROE*, and the independent variable is *Subsidy*. All the variables are defined in Table 1. T-statistics used to signal the robustness of standard errors clustered at the firm level are reported in parentheses. ***, **, and *, indicating statistical significance at 1%, 5%, and 10% levels respectively.

Table 6. Purpose of subsidy and performance.

Variable	Unclear_Subsidy	Clear_Subsidy
Subsidy	−0.702***	−0.285
	(−5.56)	(−0.97)
SOE	−2.858***	−2.100**
	(−6.26)	(−2.34)
Leverage	−0.201***	−0.142***
	(−11.90)	(−4.06)
Size	2.680***	2.189***
	(5.92)	(2.70)
Share	0.061**	0.089
	(2.35)	(1.58)
Dual	0.225	−2.181**
	(0.53)	(−2.47)
Growth	4.056***	4.166***
	(9.99)	(6.89)
Management_cost	0.911**	0.316
	(2.30)	(0.42)
Asset_turnover	4.720***	4.532***
	(9.83)	(4.45)
Industry	Yes	Yes
Year	Yes	Yes
N	8397	1733
Adj_R^2	0.185	0.140

Notes: This table reports the regression results of the purpose of the subsidy on performance. The dependent variable is *ROE*, and the independent variable is *Unclear_subsidy* and *Clear_subsidy*. All the variables are defined in Table 1. T-statistics used to signal the robustness of standard errors clustered at the firm level are reported in parentheses. ***, **, and *, indicating statistical significance at 1%, 5%, and 10% levels respectively.

Table 7. Purpose of subsidy and performance in SOEs versus non-SOEs.

	Unclear_Subsidy		Clear_Subsidy	
	SOE	N-SOE	SOE	N-SOE
Subsidy	−0.878***	−0.429	−0.459	0.046
	(−4.87)	(−1.52)	(−1.10)	(0.13)
Leverage	−0.234***	−0.172***	−0.163***	−0.114*
	(−9.08)	(−7.72)	(−3.34)	(−1.92)
Size	2.724***	2.921***	1.534	3.478**
	(4.30)	(4.50)	(1.46)	(2.16)
Share	0.112**	0.054*	0.05	0.147**
	(2.41)	(1.83)	(0.46)	(2.06)
Dual	−0.547	0.250	−4.665***	−1.086
	(−0.66)	(0.53)	(−3.26)	(−0.97)
Growth	4.035***	4.161***	5.274***	2.553***
	(6.74)	(8.13)	(5.49)	(4.20)
Management_cost	0.694	0.832	1.026	−1.423
	(1.25)	(1.55)	(1.01)	(−1.07)
Asset_turnover	4.549***	4.780***	3.618***	5.433***
	(6.53)	(7.42)	(2.74)	(3.20)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	4555	3842	1000	733
Adj_R^2	0.183	0.194	0.15	0.144

Notes: This table reports the regression results of the purpose of the subsidy on performance in SOEs and non-SOEs. From columns 1 to 2, the independent variable is *Unclear_subsidy*. From columns 3 to 4, the independent variable is *Clear_subsidy*. The dependent variable is *ROE*. All the variables are defined in Table 1. T-statistics used to signal the robustness of standard errors clustered at the firm level are reported in parentheses. ***, **, and *, indicating statistical significance at 1%, 5%, and 10% levels respectively.

of government grants. The *Clear_Subsidy* with a strong constraint is significantly higher than the subsidies of an unclear original intention, which proves Hypothesis 1.

4.3.3. Purpose of a subsidy and performance in SOE versus non-SOE

Table 7 reports the results of tests on the purpose of a subsidy and performance in SOEs compared with non-SOEs. From Table 7 it can be seen that, in SOEs, the government subsidy with an unclear original intention has a significant negative effect on the firm's accounting performance, when the *Unclear_Subsidy* increases 1%, the firm's accounting performance significantly decreases by 0.878%. In contrast, in non-SOEs, the government subsidy with an unclear original intention has no significant negative effect on the firm's accounting performance. As we can see, compared with non-SOEs, in SOEs the efficiency of *Unclear_Subsidy* is lower. Therefore, this paper verifies Hypothesis 2.

At the same time, we can also find that the impact on the firm's accounting performance of the government subsidies with an explicit original intention does not differ significantly between SOEs and non-SOEs. The *Clear_Subsidy* has no significant effect on the firm's performance. It is seen that the nature of the property has no significant impact on allocation efficiency of a government subsidy with a specific intention.

Table 8. The impact of government quality on the purpose of a subsidy and performance.

Government quality and subsidy		Government quality, subsidy and performance	
	Unclear_subsidy		ROE
GQ	−0.164**	Unclear_subsidy	−0.011***
	(−2.38)		(−2.94)
SOE	0.011	GQ	0.074
	(0.13)		(1.06)
Leverage	−0.107	GQ*Unclear_subsidy	0.005***
	(−0.55)		(2.16)
Size	0.470***	SOE	0.004
	(6.82)		(0.99)
Share	−0.046	Leverage	−0.068***
	(−0.97)		(−4.22)
Dual	0.045	Size	0.006*
	(0.50)		(1.70)
Growth	−0.115	Share	−0.001
	(−1.39)		(−1.35)
Management_cost	0.513***	Dual	−0.005
	(6.79)		(−1.16)
Asset_turnover	0.009**	Growth	0.088***
	(2.90)		(10.95)
		Management_cost	−0.007*
			(−1.89)
		Asset_turnover	0.014***
			(3.00)
Industry	Yes	Industry	Yes
Year	Yes	Year	Yes
N	8397	N	8397
Adj_R²	0.367	Adj_R²	0.067

Notes: This table reports the regression results of the impact of government quality on the purpose of a subsidy and performance. The dependent variable in column 1 is *Unclear_subsidy* and in column 2 is *ROE*. The independent variable is *GQ* (government quality). All the variables are defined in Table 1. T-statistics used to signal the robustness of standard errors clustered at the firm level are reported in parentheses. ***, **, and *, indicating statistical significance at 1%, 5%, and 10% levels respectively.

4.3.4. The impact of government quality on the purpose of a subsidy and firm performance

Table 8 shows that for the government subsidy, at the 5% significance level the government quality and subsidy are negatively correlated. It indicates that a higher government quality comes with higher level of government control, and a standardised government decision-making process can reduce the chance of enterprises obtaining government subsidies through a non-normal way. It can test Hypothesis 3.

Furthermore, we analyse whether the government quality can affect the efficiency of the government subsidies with no specific intention. From Table 8 it can be seen that government subsidies with no specific original intention have a significantly negative impact on the accounting performance. After considering the government quality, the coefficient of interaction is positive. It shows that the government quality can weaken the negative effect of the government subsidy with no original intention on the firm's performance and improve the efficiency of an unclear subsidy, thus verifying Hypothesis 3.

4.4. Robustness test

To provide a more robust conclusion, we use the following methods to perform the robustness test. The regression results are consistent with the above findings, which indicates that the findings are robust.

First, in the above regression, we find that a government subsidy has a negative relationship with the accounting performance. The possible explanation is that the more the losses or the worse the performance, the more likely the firm is to receive a subsidy, so there is a negative relationship between the government subsidy and the accounting performance. To respond to this explanation, we further control the performance at the beginning of the year. Our untabulated results show that after considering the previous year's performance, there is a significantly negative relationship of subsidy and performance. It indicates that the conclusion is robust.

Second, in order to eliminate the heteroscedasticity caused by the amount of government subsidy, we use government subsidy divided by the total assets of the listed firms as the measure of the subsidy variable. The result is consistent with the basic result.

Third, we use ROE of the next year as the dependent variable to reduce the endogeneity. The result shows that using ROE of the next year as a proxy is consistent with the basic result.

Fourth, in order to avoid the deviation of using a single performance indicator, we use ROA as another proxy of performance. The result is consistent with the basic result.

Finally, it may be that firms receive a subsidy for a decline in performance, in which case there is an endogeneity problem between the government subsidy and the performance. To further explore the relationship between them, we divide firms into two groups according to whether the performance is declining or increasing. The results show a significant negative relationship between subsidy and performance in declining and increasing groups. The result is consistent with the above conclusion.

5. Further analysis: underlying mechanism

Above all, we prove that a subsidy without a definite purpose has a lower efficiency than a subsidy with a definite purpose. Furthermore, we analyse the specific mechanism by which the subsidy without a definite purpose affects performance.

5.1. The unclear subsidy and investment efficiency

According to McLean, Zhang, and Zhao (2012), this paper uses the sensitivity model of Tobin's Q & Investment to test whether the cause of the low efficiency of a subsidy without a definite purpose is because it reduces the investment efficiency of listed companies. The model is as follows:

$$INV_t = \beta_1 TBQ_{t-1} + \beta_2 Unclear\_subsidy_t + \beta_3 TBQ_{t-1} * Unclear\_subsidy_t + ControlVariable + \varepsilon$$

(2)

In Equation (2), INV_t is the ratio of the firm's capital investment levels and the total assets at the beginning. The level of the firm's capital investment refers to the cash paid for purchasing fixed assets, intangible assets and other long-term assets. TBQ_{t-1} is lagged Tobin's Q, which is calculated as (market price per share * the amount of outstanding shares + net assets per share * the amount of non-tradable shares + book value of liabilities)/total assets. This paper uses the natural logarithm of Tobin's Q value. In Equation (2), we also control such variables as the size of the company, the company's capital structure, year dummy and industry dummy. All variables are defined in the Table 1.

In addition to the corporate level regression analysis, we also analyse the regional level. We first run a regression analysis for Equation (3) to estimate the coefficient β_1 of TBQ_{t-1} for each region in Equation (3). Then we put β_1 in Equation (4) as explanatory variables (we adopt log($1 + \beta_1$) separately[7]) to build Equation (4). In addition, the local GDP is controlled in Equation (4).

$$INV_t = \beta_1 TBQ_{t-1} + \beta_2 Size_t + \beta_3 Leverage_t + \varepsilon_t \tag{3}$$

$$Log(1 + \beta_1) = \alpha + \beta_4 Unclear\_subsidy_t + \beta_5 Size_t + \beta_6 Leverage_t + \beta_7 Local\_GDP_t + \varepsilon \tag{4}$$

The regression coefficient β_4 represents the marginal effect of *Unclear_Subsidy* on the coefficient of TBQ_{t-1}, which equals the regression coefficients of interaction term (TBQ_{t-1}*Unclear_Subsidy) in Equation (3). If β_4 is significantly less than zero, the hypothesis is proved.

5.2. The unclear subsidy and rent-seeking cost

The rent-seeking activities caused by subsidies are the most direct results of government behaviour alienation and enterprise behaviour alienation. Compared with the subsidy with a definite purpose, government officials have more discretion for the subsidy without a definite purpose. Corporates are more likely to receive the subsidy without a definite purpose through rent-seeking activities. Corporates conduct rent-seeking activities in order to obtain the subsidies. But the rent-seeking activities have costs that are non-productive expenditure, then cause an increase of cost and have a negative influence on corporate performance (Ren & Zhang, 2013), which cannot directly or indirectly contribute to the expenditure of producing goods or services from the perspective of social production. Therefore, we further analyse the specific reasons for the low efficiency of a subsidy without a definite purpose by analysing the relationship between the subsidy without a definite purpose and rent-seeking cost.

Rent-seeking is a kind of unproductive activity and the rent-seeking cost is often hidden in the non-productive expenditure, so it is not easy to identify. Wan and Chen (2010) and Yu et al. (2010) find that the rent-seeking cost generated from obtaining the government subsidies is often included in non-productive expenditure, such as entertainment expenses, publicity expenses and travel expenses. In this paper, with reference to Wan and Chen (2010) and Anderson, Banker, Huang, and Janakiraman (2007), we select the ratio of management cost to the total output as indicators of the rent-seeking cost and set up Equation (5).

$$Rent\_\cos t_t = \beta_1 Unclear\_subsidy_t + Control\ Variable + \varepsilon \tag{5}$$

In Equation (5), *Rent_cost* represents corporate rent-seeking costs, and we use the ratio of administrative expenses and operating income of listed firms in the current period. *Unclear_Subsidy* is the subsidy without a definite purpose that listed firms obtained and we use its natural logarithm to represent it. *Paystaff* represents the wages and welfare that a company pays for employees and this article uses the difference between 'the cash flow paid to staff and paid for employees' project and the 'company executives' total remuneration' to represent it. *Depre* is the depreciation expense enterprises carried that year. Assuming that the

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[7]We use log($1+\beta_3$) as the explained variable to replace β_3; the main reason is for the consideration of the normal distribution.

Table 9. The mechanism of an unclear subsidy.

	Firm level	District level		Firm level	
	INV	Log(1+β_1)		*Rent_cost*	
TBQ_{t-1}	0.005**	Unclear_subsidy	−0.021**	Unclear_subsidy	0.012**
	(2.24)		(−2.08)		(2.34)
Unclear_subsidy$_t$	0.007	Size	0.026*	Paystaff	0.378***
	(1.08)		(1.68)		(5.67)
TBQ_{t-1}*Unclear_subsidy	−0.012**	Leverage	−0.019	Depre	0.240**
	(−2.36)		(−1.01)		(2.01)
Size	0.011***	Local_GDP	−0.028***	SOE	0.011
	(3.08)		(−0.78)		(1.12)
Leverage	−0.028***			Asset_turnover	−0.121***
	(−3.24)				(−7.02)
				Size	−0.012***
					(−4.52)
Industry	Yes			Industry	Yes
Year	Yes	Year	Yes	Year	Yes
N	8397	N	656	N	8397
Adj_R^2	0.186	Adj_R^2	0.156	Adj_R^2	0.421

Notes: This table reports the regression results of the mechanism of an unclear subsidy on performance. The dependent variable in column (1) is *INV*, in column (2) is log(1+β_1), in column (3) is *Rent_cost*. The independent variable is *Unclear_subsidy*. All the variables are defined in Table 1. T-statistics used to signal the robustness of standard errors clustered at the firm level are reported in parentheses. ***, **, and *, indicating statistical significance at 1%, 5%, and 10% levels respectively.

proportion of the fixed assets for management accounting for total assets in the same industry is constant, then the depreciation expense in the corporate management expenses must be proportional to the corporate total depreciation. In this paper, we use the ratio of the current period depreciation expense to total assets to represent it. We also control such variables as the size of the company, the company's capital structure, year dummy and industry dummy. All variables are shown in Table 1. If the coefficient β_1 is significantly greater than zero, it indicates that the subsidy without a definite purpose will lead to increasing rent-seeking cost, thus explaining the reasons for the low efficiency of a subsidy without a definite purpose.

Table 9 shows the results of the underlying mechanism through which subsidy affects performance. As can be seen from Table 9, the regression coefficient β_3 of the interaction term TBQ_{t-1}*Unclear_Subsidy is significantly negative, which indicates that the more listed companies obtain subsidies without a definite purpose, the more likely they are to weaken the effect of the public governance mechanism that government provided on the resources allocation. At the district level, the government quality is significantly positively correlated with log(1+β_1), which indicates that the high-quality government can reduce the corporate agency problems, stimulate managers' incentives, provide more accurate financial reporting and improve the sensitivity of investment and investment opportunities (Chen et al., 2012). While the interaction of government quality and the dummy variables of subsidy without definite purpose is significantly negatively correlated with log(1+β_1), which indicates that the subsidies without a definite purpose that listed firms obtained will weaken the sensitivity of investment and investment opportunities. This is consistent with our evidence from the corporate level and indicates that the subsidy without a definite purpose that listed companies obtained will weaken the effect of the public governance mechanism that a government puts on the resources allocation.

Meanwhile, we find that the government subsidy without a definite purpose will significantly increase the rent-seeking cost. It shows that in the condition of a lack of external

constraints, the firm will use the government subsidy obtained to carry out the inefficient investment and rent-seeking activities, and the performance is dragged down, which then affects the efficiency of the allocation of government subsidy.

6. Conclusion

Based on the perspective of subsidy heterogeneity, by using 10,130 observations of China listed firms from 2007 to 2012, this paper examines the effect of different categories of subsidies on corporate performance, and tests the government quality's effect on the efficiency of subsidy. We find that the purpose of a subsidy affects the efficiency of subsidy, and a subsidy with a definite purpose has better efficiency than a subsidy without a definite purpose. For a subsidy without a definite purpose, due to poor binding, funds are more easily distorted in the process of actual use, thus reducing the efficiency of subsidies. In contrast, definite purposes and conditions of subsidies weaken the possibility of alienation of subsidy funds, so as to ensure the efficiency of the subsidy, and realise the role of subsidies in making up for a lack of market regulation. Specifically, a subsidy with a definite purpose received by listed firms has an insignificant effect on corporate performance, while a subsidy without a definite purpose that they received has a significantly negative effect on corporate accounting performance. We also investigated that the efficiency of a subsidy without a definite purpose is susceptible to being influenced by the nature of property rights. Compared with non-SOEs, a subsidy without a definite purpose in SOEs has a worse efficiency. SOEs can gain more subsidies without a definite purpose, which forcibly changes the market principles of fund allocation by virtue of 'political contact' or 'nature of property rights' and other informal ways. Then funds deviate from the purpose of maximising its value, and the end result must be public funding mismatches and inefficiencies. Although non-SOEs also can gain the subsidy without a definite purpose, compared with SOEs, non-SOEs will face more political intervention, and more social responsibility The policy burden under government intervention will control the flow of subsidy and reduce the possibility of funds being alienated in the process of actual use, thus ensuring the efficiency of subsidy. In addition, the improvement of government quality has a positive effect on the definiteness of a subsidy and efficiency of a subsidy without a definite purpose.

Disclosure statement

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