



# Government performance auditing demand research based on the neo-institutional economics

Hui Fan

*Antai College of Economics & Management,  
Shanghai Jiao Tong University, Shanghai, China*

## Abstract

**Purpose** – The purpose of this paper, based on the institution change theory, is to analyze the factors which influence the auditees' demand for government performance auditing (GPA).

**Design/methodology/approach** – This study acquired the data by survey. The author investigated the government officials and the state-owned enterprises and institutions' senior managers from 28 provinces and cities, then used the econometrics model to test the hypotheses.

**Findings** – By analyzing the survey data, it is found that the respondents who come from the region where the economy is less developed and the legislative level is lower have more demand for the performance auditing; the respondents' knowledge about the GPA has not increased their demand; the auditing penalty effects has negative impact on the demand for performance auditing and the organizational support has positive effects on their demand.

**Research limitations/implications** – The findings in this study suggest that there is not enough GPA supply in the region where the economy is less developed and the legislative level is lower, and that the auditees have not realized the benefits of GPA, although they know something about the GPA.

**Practical implications** – The national audit office and its branches should pay more attention to the region where the developmental level of GPA is lower and allocate the auditing resources more efficiently. The government officials should learn more about GPA to realize its benefits and distinguish GPA from the other kinds of government auditing, such as the financial revenues and expenditures auditing. Moreover, the government at all levels should give substantial support to GPA.

**Originality/value** – The paper empirically analyzes, for the first time, the government auditees' demand for GPA. The paper extends previous studies in this field by surveying auditees who have been neglected but have important impact on the development of GPA.

**Keywords** China, Auditing, Government agencies, Economics, Neo-institutional economics, Institutional change theory, Government performance auditing, Demand

**Paper type** Research paper



## Introduction

With the increase of democratic consciousness and the substantial growth of public expense, there is a tendency to develop a government performance audit (GPA) (Chen, 2006). China's Government audit (also known as national audit) institution began in the 1980s. With 30-years of development, it has developed from mere "financial revenues and expenditures audit" to the historical stage of drawing equal attention to both "financial revenues and expenditures audit" and "performance audit".

**JEL classification** – F239.0

The National Audit Office made clear that they would advance the performance auditing work in the next few years in its future working development planning. At the same time, the voice of the whole society for performance auditing is getting higher and higher. Thus, conducting the research of performance auditing has become a significant issue in academics.

Government performance auditing is an important institutional arrangement under the government governance structure. The process that GPA developed from nothing to a certain size shows us the history of China's Government governance reform. Whether the GPA can move forward smoothly and enter into a deeper level still depends on the game between the government and the public and whether the government's benefits (mainly reflected in the benefits of government officials) can be balanced with the public's benefits becomes the key element of developing GPA institution. Therefore, it seems extremely necessary to follow the general research ideas of the institutional economics and to discuss the stakeholders' psychological preference and demand for GPA institution (Wang, 2009) which could be the theoretical basis when the GPA policy is further modified and designed.

According to the Audit Law of the People's Republic of China, the State Council, local governments at all levels, state-owned financial institutions and state-owned enterprises and public institutions, all of them have to accept the supervision of government auditing. Here in this paper, they are called the "audited departments". With the stretch of the new policy, performance auditing is bound to affect the vital interest of those "audit departments", especially the interest of those officials. Due to the existing differences among different regions on economic development, laws and regulations level, technological level, performance auditing's development level and accountability level (Zhai, 2009), the expected benefits that performance auditing policy brings to the "audited departments" and the auditees will be different, therefore, the audited bodies' subjective evaluation and demand for performance auditing will be different. This paper explores the underlying causes that impact on the auditees' demand for GPA on the perspective of institutional change. Clarifying these issues will have important practical implications to further develop China's performance audit policy, to balance the process of regional development of GPA and to optimize the allocation of resources in different regions, as well as to amend the performance auditing institutions. Moreover, lots of empirical studies have shown that "organizational support" is the key element for enterprises and non-profit organizations to successfully implement the management control system (Shields, 1995; Cavalluzzo and Ittner, 2004) and this paper tests the applicability of this conclusion in the field of GPA.

Subject to the data issues, limited empirical evidence exists with respect to performance auditing and most of the existing literatures are descriptive statistical researches about GPA issues from the perspective of audit offices, neglecting the "audited departments" who are also very important interest groups. Johnsen *et al.* (2001) posits that researchers should take more comparative statistical analysis to explore the GPA issues and local government auditing issues should be received more attention comparing with the central government auditing. This paper enriches the literatures in this field and provides practical implication for the development of GPA in China.

The remainder of the paper is organized as follows: second section mainly gives a theoretical review of the relationship between current institutional environment, the audit accountability level, organizational support and the demand for the GPA

and then gives testable hypotheses; third section is for research design; empirical results are presented in fourth section; five section gives the conclusions and practice suggestion of this paper.

### Theoretical analysis and research hypotheses

#### *Institutional environment and the demand for GPA*

*Analysis of demand for GPA under the Neoinstitutional Economics analytical framework.* Neoinstitutional economist North (1990) posits that an institution is some constraints which are set to determine the relationship between people and these constraints can be divided to informal constraints (such as moral constraints, traditions, codes of conduct) and formal rules (constitutions, laws, property rights, etc.). According to the Neoinstitutional Economics, selection and change of an institution can be analyzed by using the classic “demand-supply” theoretical framework (Lin, 1994). For performance auditing institution, the demand for it is mainly from the public and the audited entity. The public is the final demander for GPA, however, the audited departments also have a demand for performance audit. Because when there is an effective reward and punishment mechanism, government officials could get promotion, rewards and other benefits by using public resources effectively. While at the same time they also have to take the responsibilities of using public resources ineffectively, therefore, they lose the chance of taking informational advantage to grab their personal interests. To maximum their benefits, the audited entity would have a motivation to pursue GPA (Zhao *et al.*, 2008). This paper focuses on analyzing the auditees’ requirements towards performance audit.

In the theory of institutional change in Neoinstitutional Economics, the expected benefits, technical characteristics and market size are the main factors which affect the demand for institution (Wang, 2009). First, when the new institutional arrangements can bring more expected benefits for the demander, the demand for the new institution will be more intense. Second, the development of technology can reduce transaction costs and makes the primary institutional arrangements become useful so that demand will to be expanded. Third, the size of the market will also have an impact on the institution’s demand. When the market is small, the institutional arrangements involve little stakeholders and they cannot receive much social attention. In addition, the institutional economics also emphasize on the impact of institutional environment on institutional arrangements. Institutional environment is a series of basic political, social and legal rules using to form the foundation of social production, exchange and distribution. As an exogenous variable, the institutional environment will have an important impact on the changes, development and the extent of use of institutional arrangements (North, 1990).

Some scholars study the relationship between the institutional environment and the performance auditing. Yetano (2005) researches on the implementation of best value auditing among 13 EU countries and four non-EU countries. He finds that the different levels of development of national auditing are, to a large extent affected by legislation, economic environment, cultural and other public organizational and management factors, each of these environmental differences even makes the definition of best value auditing cannot be unified[1]. Nath (2010) do a detailed investigation on the development process of the Fiji GPA and argues that the auditor general, Public Accounts Committee, Parliament and the media play a role in the process of development, which shows how social and political forces affect the performance audit. Due to the significant regional

differences of the GPA's development in China (Zhai, 2009), Zhao *et al.* (2010) analyze how the institutional environment influences the development of China's GPA. Using the local economic development level, legal environment level, location and the scale of fiscal expenditures as the proxies for institutional environment, they posit that the development level of GPA in different regions has a significant positive correlation with those institutional environment indexes. Although the above literatures study the interaction between institutional environment and the development of GPA, they all stretch from the perspective of the audit supply, ignoring the auditees' demand for GPA also has impact on the GPA's development. Chen (2006) posits the phenomena that the auditees have insufficient demand for performance audit from the perspective of costs and benefits related to institutional changes, but he does not do direct empirical analysis. In this paper, the theory of institutional change is used to discuss how these three aspects affect the auditees' auditing requirements and under different institutional environment, how these factors play a role.

*The institutional environment and the expected benefits of GPA.* The development of GPA in China is still in the initial stage. Influenced by the differences between economic development level, legal environment, the regional cultural and other factors, the relevant government officers' knowledge about GPA are in different levels. Some scholars posit that the lack of sufficient understanding about performance audit is always the biggest restriction while carrying out the performance audit. Some people think that performance auditing theory is too mysterious and unattainable to be implemented in our country. Some people think that there are no economic and efficiency issues for government activities, therefore there is no need for auditing. This one-sided understanding has seriously affected the development of performance auditing work (Yang, 2006; Liu, 2004). The auditees should first have a clear understanding of GPA which can help the audited departments find the reasons for poor performance, also can provide suggestions to improve their performance and help them better fulfill accountability (Meng, 2008). Only when they realize the expected benefits performance audit can bring to them, could they accept the performance audit ideologically. Thus, we propose:

H1. The level of auditees' understanding of GPA will be positive related to their demand for GPA.

To a large extent, the demand for an institution is also limited by the level of institution supply (Lu, 2007). The development history of some Western countries shows that society demand is the driving force for the emergence and development of government performance auditing. The driving force comes from the long period value preference which is generally agreed both by the public and by the legislative institutions. However, GPA's development in China is different from the Western model of development. There are no empirical studies which can prove that Chinese GPA has a positive correlation with the social supply and demand (Nei and Zhang, 2008). Basically speaking, GPA in China is the expansion of traditional government auditing field made by the audit offices in order to meet the trend of social development. It is a supply-driven model of development (Chen *et al.*, 2005; Liu, 2009). This top-down reform path determines that stakeholders' the cognition and demand issue of GPA will be deeper restricted by the supply level of GPA.

Empirical studies show that there are significant regional differences in the supply of government performance auditing in China. Zhao *et al.* (2010) argue that regional

economic development, legal environment, regional factor and government expenditure all have significant positive correlation with the development of performance audit. While in those economically underdeveloped areas in China, the allocation of audit expenses is significantly in a shortage or even is stopped. The auditors get low treatment and also the performance auditing is carried out more weakly (Xu, 2008). Audit officials and practitioners all have a strong personal experience of the imbalance development status of China's GPA among different regions. The deputy auditor general of the National Audit Office of China, Dong (2009) and president of China Audit Society Zhai (2009) both emphasize this issue on the conference and the published monograph. In terms of the overall situation of the development of GPA, in some economically developed areas, such as Shenzhen city, Jiangsu Province, Qingdao city, Tianjin city and other regions, the GPA has made some achievements. Since the year 2002, Shenzhen began to explore the independent model of GPA which is also international oriented. After nearly a decade of development, Shenzhen has become a "star city" in carrying out performance audits; Qingdao municipal audit bureau developed a unique "integrated auditing model"; Tianjin municipal Audit Bureau pioneered the "2 plus 1 model"; Jiangsu Audit Department has been committed to the exploration of theory and practice of GPA's development. While in the middle and west area in China, the development of GPA is still in the exploration and initial phase (Cui, 2008). Some practitioners point out that currently in China the distribution of professional auditors who are capable of performance auditing is very uneven. The differences of GPA's development not only exist in a top-down government administrative level but also exist in geographic regions having different economic development levels (Feng, 2009).

Therefore, from the perspective of supply-driven theory, performance audit's implementation in economically developed areas is significantly stronger than that in economically backward areas. According to Western economics theory of "diminishing marginal utility", audited departments' demand for performance audit in developed areas have been fulfilled to some extent for the purpose of improving their performance, while the backward areas are lack of development; therefore the corresponding "marginal benefits" should be greater if performance audit is further developed in these areas. Thus, we propose:

*H2a.* When implementing the performance audits, the auditees will have bigger "marginal benefits" in the region where the economy is more backward, level of the marketization is lower and legal environment is worse.

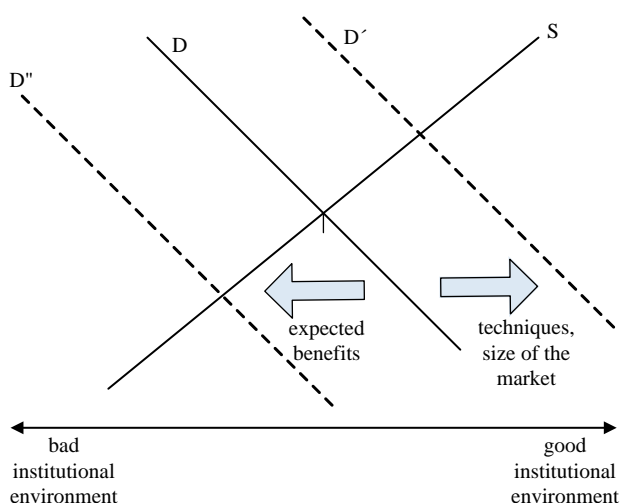
*The institutional environment, GPA techniques and size of the market.* Technological changes will lead to institutional re-adjustment to a large extent. Performance auditing is focused on evaluating and improving the economy, efficiency and effectiveness when using public resources. Compared with financial revenues and expenditures auditing, GPA is more professional and more comprehensive, thus it needs more advanced technology and more social resources as support. According to the Neoinstitutional Economics, the social costs of the institution will not only affect its supply, but also have an impact on the demand for it, including the demand of the auditees and the social public (Yang, 2007). The auditees are recipients of performance audit institution, whose requirements are determined by considering costs and benefits. Chen (2006) also posits that the earlier complement of performance audit in China has a relatively high price which impedes the audited body's requirements towards performance.

In recent years, with the promotion of information technology and its application in the public sectors and auditing institutions, the previous high cost of the auditing have been alleviated to some extent. Improvement in cost creates the conditions for implementation of the performance audit. However, for different regions with different technological levels, the relative costs of GPA still keep a gap. The area with low level of economic development and poor institutional environment is also with relatively less knowledge accumulation and lower level of technological development, thus, we believe that the relative cost is higher when implement GPA in the region where the economy is more backward, level of the marketization is lower and legal environment is worse. In addition, the size of market also significantly affects the cost of the performance audit. As discussed before, the regions with higher level of economic development have relatively rich supply for GPA. Due to the economies of scale, the early GPA's cost has become sunk cost, thus the cost allocated to each latter auditing project will be smaller (Chen, 2006). Based on the above analysis of performance audit technology and market size, we propose:

*H2b.* When implementing the performance audits, the cost is higher in the region where the economy is more backward, level of the marketization is lower and legal environment is worse.

From *H2a* and *H2b*, we argue that the institutional environment has a complex impact on the demand for GPA. On one hand, auditees in the areas with more backward institutional environment will have higher marginal benefits caused by the inadequate supply, which promotes the institutional requirements of them. On the other hand, the auditing technology is more backward and conditions are not ripe, as well as the market size is smaller, hence these reasons will weaken the demand in these areas to some extent (Figure 1). This makes it an empirical issue that how do the institutional environment affect the demand for GPA, thus we propose:

*H2.* The level of economic development, the level of marketization and the legal environment will have a significant impact on the auditees' demand for GPA.



**Figure 1.**  
The impact of institutional  
environment to the  
demand for GPA

*The audit level of accountability and the requirements of performance audit*

According to the Audit Law of the People's Republic of China and newly revised "National Audit Standards" in 2010, when implementing performance auditing, government audit offices should issue punitory opinions for the auditees' illegal behaviors and give some improving suggestions if it is needed. Accordingly, the accountability level of GPA is defined as to what extent that the issued punitory opinions has been executed and to what extent that the suggestions have been accepted (Huang and Wang, 2010). The level of accountability reflects the credibility and influence of GPA and it also reflects the usefulness of the auditing results. From the perspective of the public, the accountability level of GPA is an important aspect of performance auditing quality. The higher the level of accountability is, the better government audit acts its ability of binding and deterrence. But for those who are audited, the intensity of accountability means a stronger supervision of their rights. Once issued with punitory opinions, they would be more likely punished. Therefore, the auditees are more likely to spontaneously choose to avoid GPA, thereby it would weaken the demand for performance auditing, thus we propose:

- H3. The intensity of accountability level of GPA will negatively relate to the auditees' demand for GPA.

*Organization support and requirements of performance audit*

Literatures in organizational behavior and management accounting fields posit that the perceived support from senior managers is the key factor to determine whether the organization's performance evaluation activities can be successfully implemented (Sharma and Yetton, 2003). Shields (1995) argues that senior managers can effectively input the resources to those activities they believe valuable and they can also provide political support for these activities, besides, they can exclude those individuals or groups that hinder the development of these activities. Fernandez and Rainey (2006) note that if initiatives and reforms such as performance evaluation want to be carried out in public sectors and organizations, they have to be approved by senior managers first and then get the support of middle-level managers and staff. On one hand, the support from senior management can help to overcome the resistant attitude of the organization, integrate resources and maintain the staff's acceptance towards the initiatives, on the other hand, the support from middle-level managers in various departments will ensure that performance evaluation initiative can become part of the organization's strategic framework (Ingraham and Donahue, 2000). Cavalluzzo and Ittner (2004) and Yang (2007) find that the external political support and the support within the organization will both have a positive impact on government performance evaluation activity. Chan (2004) and Ramanna (2009) investigate the utilization of the performance evaluation system in Western countries' government departments and they posit that implementation of performance evaluation system make the officials' activities more transparent, which brought an anxious atmosphere to public organizations, so senior management's support is more emphasized on:

- H4. Organizational support will have a significantly positive correlation with the auditees' demand for GPA.

## Research design

### Sample

The survey covered 28 provinces, autonomous regions and municipalities directly under the Central Government in Mainland China, a total of 2,300 people including officials of Chinese Governments and public institutions, senior managers of the state-owned enterprises. Among them, 200 people are officials from the government auditing departments, 1,400 are government officials and 200 are from National People's Congress and National Committee of the Chinese people's Political Consultative Conference system, as well as 400 senior managers of state-owned enterprises and 100 experts in related fields. Among the 1,400 government officials from non-audit departments, 300 are officials of the State Council and its branch departments and the other 1,100 are officials of local government. The contact ways of respondents are got from those departments' official web sites and the 2,300 respondents are determined using a random sampling selection method. The survey took the way of mailing letters. An envelope with the questionnaire and a reminder requested for reply before the end of August 2010 was mailed to the auditees in June 2010, 14 surveys were returned because of the address change or other reasons. Up to the day of August 31, 2010, totally 215 questionnaires were returned and 196 questionnaires were completed and usable for data analysis, showing an effective response rate of 9 percent ( $196/(2,300-14)$ ). We need the information of respondents' respective districts in this study. however, three respondents did not fill in the district information, so finally 193 were valid questionnaires.

Table I shows the regional distribution of the usable replies. Under the current zoning, 85 letters are from the Eastern China, 43 letters are from the central area and 65 letters are from the Western China. Answer letters from the central region are relatively fewer, probably because the region has fewer provinces than the other two regions; answer letters from the eastern region are relatively more, mainly due to the Chinese Central Ministries and Commissions are located in Beijing, thus the letters back from Beijing reached 27. In general, the number of samples is relatively average among 28 provinces. The result could meet the requirements of our study.

The basic characteristics of the sample respondents are shown in Table II. Among the usable responses, 80.3 percent of respondents are from government agencies, 6.7 percent of respondents were from public institutions and 11.5 percent come from state-owned enterprises. About, 99 percent of respondents belong to the target auditees of GPA. As for the respondents' working departments, most of them are up to municipal-level, accounting for 56 percent of the sample; provincial-level and county-level departments each accounts

	Provinces, autonomous regions and municipalities in various regions of China where the respondents come from	Numbers of respondents
East China	Guangdong, Zhejiang, Fujian, Jiangsu, Shandong, Beijing, Shanghai, Tianjin, Hainan, Liaoning, Hebei	85
Central China	Anhui, Henan, Hubei, Hunan, Jilin, Heilongjiang, Jiangxi, Shanxi	43
West China	Sichuan, Chongqing, Guangxi, Yunnan, Guizhou, Shanxi, Gansu, Qinghai, Xinjiang	65
Total		193

**Table I.**  
Regional distribution of  
the respondents



**Table II.**  
Respondent  
characteristics

Respondent's department classification	Government agencies	Public institutions	State-owned enterprises	Others	Missing data	
The level of respondent's department	80.3% Provincial-level	6.7% Municipal-level	11.5% County-level	1.0% Basic-level	0.5% Others	Missing data
Respondent's position level	19.2% Provincial-level	56% Municipal-level	19.2% County-level	3.1% Basic-level	0.5% Others	2.1% Missing data
Respondent's education	6.7% Doctor	53.9% Master	27.5% Bachelor	8.8% Under bachelor	2.1% Missing data	1%
	11.9%	33.7%	45.1%	6.2%	3.1%	

for 19.2 percent. More than half of the respondents (53.9 percent) are in bureau-level administrative positions, followed by the county-level (27.5 percent). There are less respondents who are in provincial-level positions. In terms of education, 11.9 percent of the respondents are doctors; 33.7 percent are masters; 45.1 percent are bachelors. It seems that respondents' high level of education can help to ensure the quality of the reply. In addition, the average age of the respondents is 49 years old. Males are accounted for 84.1 percent and women are accounted for 15.9 percent and more than 97 percent of the respondents are party members of the Chinese Communist Party.

#### *Model and measures*

Empirical researches on GPA are scarce in academia. This study takes the questionnaires of performance audit studies of Chen (2006) and Shi *et al.* (2009) as reference. We also consult a number of auditing field experts for opinions and conduct a pre-test among the classes of Master of Public Administration at Shanghai Jiao Tong University in order to ensure the quality of the questionnaires. In this paper, the measurements of main variables are as follows.

*The demand for GPA.* We construct an indicator for "demand for GPA" as the dependent variable, which is used for measuring the requirements of those auditees toward government performance auditing. The indicator is consisted with three secondary-level indicators: the degree of agreement, the degree of urgency and the degree of taking actions. Among them, the degree of agreement reflects to what extent those auditees agree with the performance audit planning proposed by the National Audit Office; the degree of urgency reflects the time requirements those auditees' demand for implementing performance audit; the degree of taking actions is said to reflect their willingness to acceptance GPA and to cooperate with the auditors. All above reflect the auditees' demand for GPA from different aspects. The specific items are measured by the Likert five-point scale. The final score of the first-level indicator is the aggregate of three secondary-level indicators and the higher the score, the higher the demand.

*The level of understanding about GPA.* It is not very long for audit offices to implement GPA in China. We first construct an indicator for "understanding about GPA" to measure the understanding level of auditees from the perspective of "understanding by oneself", "others' understanding" and "carrying out activities about GPA".

As Table III shows, the specific items are measured by the Likert five-point scale and the higher the score, the deeper understanding the responders have.

*Institutional environment.* We take GDP per capita for different provinces and cities in 2009 to represent the local economic development level. The greater the number it has means the higher the level of economic development. We use “China’s Marketization Index” prepared by Fan *et al.* (2006) to measure the other institutional characteristics of various regions. Since institutional environment is a relatively stable regional characteristic and the ranking of different provinces and regions in marketization rarely fluctuate (Fan and Wang, 2010), it will not significantly modify our conclusion although we use the regional marketization index in 2007. The marketization index is consisted of five secondary-level indexes and each of them is an index reflecting the regional characteristics from a different point of view. We choose “the total score of marketization” to represent the overall process of the marketization of all regions and select the “level of intermediaries development and the legal environment” to represent

First-class indicator	Second-class indicator	Questions	Options
Demand for GPA	Agreement	To what extent do you agree with that GPA is one of the most important missions of audit offices in China as proposed in the “auditing working planning in 2003 to 2007 of National Audit Office of China”?	Very much disagree with → very much agree with
	Urgency	To what extent do you think the urgency to implement GPA at present?	As late as possible → the earlier the better
	Taking action	To what extent do you agreed with that “I will be very pleasure to cooperate with the auditors if my working unit is audited”	Very much disagree with → very much agree with
Understanding about GPA	Oneself	To what extent do you know about GPA?	Completely not
		know → completely know	
	Others	To what extent do the main managers of your working unit know about GPA? To what extent do the main managers of your department know about GPA? To what extent do your colleagues who are at the same position level with you know about GPA?	
	Activities about GPA	Have your working unit been carried out some activities or conferences about GPA? Never → frequently	
Organizational support to GPA	Support from manager	To what extent do you believe that the manager of your department support to GPA?	Very not positive → very positive
	Support from upstream authority	To what extent do you believe that the upstream authority of your department support to GPA?	

**Table III.**  
Measures of the variables

the regional legal environment. The larger the indexes are, the higher the degree of marketization and the better the legal environments are.

*The accountability of auditing.* The accountability of auditing indicates the deterrence degree those auditees have perceived which cannot be directly measured. Here in this study, we learn from the method of measuring the government auditing effect from Huang and Wang (2010). Specifically, taking data from *China Audit Yearbook* of 2007 and 2008[2], the level of audit accountability of local GPA is divided into “sanction intensity” and “prevention intensity”[3]. These two indicators are used as the proxy variables for the intensity of accountability of GPA. “Sanction intensity” is the average of four ratios: the proportion that auditees have repaid to fiscal revenue accounting for total amount that should be repaid; the proportion that the amount of reduced funding accounting for those should be reduced; the proportion that the amount funding that have been returned to the original channel according for those should be returned to the original channel and the proportion that the amount of adjusted money accounting for those should be adjusted in the public account. The “prevention intensity” is measured by the proportion that audit recommendations that have been adopted by audited departments accounting for the total audit recommendations. In order to ensure the stability, the ultimate indicators’ scores will be the average score of 2007 and 2008 year’s data. Because that the “sanction intensity” and “prevention intensity” in different provinces vary from each other greatly, we transfer these two variables to dummy variables. That is to say, those provinces that have higher value than the median value of “sanction intensity” and “prevention intensity” is equals 1, otherwise, equals 0[4].

*The organizational support.* To measure the variable of the “organizational support”, we learn from the scale developed by Cavalluzzo and Ittner (2004) and Yang and Hsieh (2007) and measure it from the aspects of “support from the leadership” and “support from the upstream authorities”. The indicator reflects the degree of organization support towards GPA perceived by the auditees. We also use a five-point scale to measure these items. The higher scores indicate higher level of organizational support perceived by the auditees.

*Control variables.* We controll the level of respondents’ department, level of respondents’ administrative position and the educational level, in order to avoid affecting the outcome caused by these factors. In addition, we also distinguish whether the respondents are from the audit system. Definition and measurements of each variable are shown in Table IV.

In order to test the hypotheses proposed in this paper, we construct the following model:

$$\begin{aligned} DEMAND = & \beta_0 + \beta_1 KNOW + \beta_2 Eco + \beta_3 Mar_{index} + \beta_4 Law_{index} \\ & + \beta_5 Eff_{sanction} + \beta_6 Eff_{prevention} + \beta_7 Support + \beta_8 Position \\ & + \beta_9 Department + \beta_{10} Auditdepart + \beta_{11} edu + \varepsilon \end{aligned}$$

### Empirical test

#### *Descriptive statistics*

The descriptive statistics of variables in the model is showed in Table V. The mean value of auditees’ demand for GPA is 12.3 and the the minimum value is 6, the maximum one is 15. For those three secondary-level indicators of DEMAND, the mean

Variable	Abbreviation	Definition and measurement
Demand for GPA	DEMAND	The higher number means the stronger demand for GPA
The level of understanding about GPA	KNOW	The higher number means the better understanding about GPA
Level of economic development	Eco	The higher number means the higher level of economic development
Level of marketization	Mar_index	The higher number means the higher level of marketization
Level of legal environment	Law_index	The higher number means the higher level of legal environment
Audit sanction intensity	Eff_sanction	Dummy variable – it equals one if the audit sanction intensity of respondent's location is higher than the median and zero otherwise
Audit prevention intensity	Eff_prevention	Dummy variable – it equals one if the audit prevention intensity of respondent's location is higher than the median and zero otherwise
Organizational support	Support	The higher number means the higher level of perceived organizational support to GPA
Level of respondents' administrative positions	Position	Dummy variable – it equals one if the level of respondents' administrative positions is provincial-level or municipal-level and zero otherwise
Level of respondents' department	Department	Dummy variable – it equals one if the level of respondents' department is provincial-level or municipal-level and zero otherwise
Audit system	Audit depart	Dummy variable – it equals one if the respondent is from audit system and zero otherwise
Education	Edu	Dummy variable – it equals one if the respondent has a doctor or master degree and zero otherwise

**Table IV.**  
Definition and measurement of variables

Variables	n	Mean	Minimum	Maximum	SD
DEMAND	193	12.2977	6	15	1.5974
Demand1	193	4.1623	1	5	0.7839
Demand2	193	4.1406	2	5	0.7260
Demand3	193	3.9948	1	5	0.6575
KNOW	193	16.5468	5	24	3.3568
Support	193	7.6310	4	10	1.5013
Eco	193	3.8395	1.16	8.95	2.6426
Mar-index	193	7.9161	4.64	11.71	2.0041
Law-index	193	6.9366	2.79	16.61	3.7029
Eff_sanction	193	0.59	0	1	0.493
Eff_prevention	193	0.57	0	1	0.496

**Table V.**  
Descriptive statistics for variables used in the multivariate analysis

value are in the range of 3.99-4.16 and their distributions are very similar with the first-level indicator. For those auditees, their average level of understanding of GPA is 16.5468 and the minimum is 5, the maximum is 24. We can see that the average level of understanding of GPA is between the option of “common understanding” and the “better understanding”. The result indicates that the level of understanding of the GPA

and the GPA'S demand are very different among individuals. In addition, as for the regions those respondents come from, there are big gaps in terms of the economic development level, the degree of marketization and the level of legal environment. For example, the minimum legal environment index is 2.79 and the maximum is 16.61.

### Empirical results

*Pearson correlation analysis of the regression variables.* Table VI shows the correlations for the variables in the model. We find that GPA's demand has a significant negative correlation with the regional economic development level, marketization and legal environment indexes. That is to say, in the regions where economic development is more backward, where government intervention for the economy is tighter and areas where the legal environment is worse, the auditees' demand for performance auditing is higher. Consistent with our expectations, the demand for performance audit has a negative correlation with "sanction intensity" and "prevention intensity" has no significant correlation with the demand for performance auditing. The degree of organizational support for GPA positively correlates with the demand for performance auditing. In addition, for the two indexes of government auditing accountability, "sanction intensity" has a significant positive correlation with the economic development level, the degree of marketization and the legal environment level, which means that the areas with high level of economic development, higher degree of marketization and better legal environment will have stronger "sanction intensity" of GPA, while "prevention intensity" is merely relates to the degree of marketization.

*Multivariate analysis.* Table VII shows the multivariate analysis of external institutional environment variables, the intensity of accountability variables and the demand for GPA variable. The coefficient of Eco is  $-0.295$ , which is significantly negative; the coefficient of Mar\_index is  $-0.275$ , which is significantly negative; the coefficient of Law\_index is  $-0.299$ , which is significantly negative. From the results of regression (1)-(3), we observe that the respondents who come from areas that have lower level of economic development, slower process of marketization and worse legal environment have higher demand for GPA and the negative coefficients all are significant in the level of 1 percent.

	KNOW	Economy	Mar_index	Law_index	Eff_dispose	Eff_suggest	SUPPORT
DEMAND	0.239***	-0.276***	-0.270***	-0.259***	-0.239***	-0.037	0.321***
KNOW	1	-0.011	0.039	0.086	-0.050	-0.150	0.395***
Eco		1	0.840***	0.823***	0.469***	0.026	-0.018
Mar_index			1	0.911***	0.608***	0.131*	0.001
Law_index				1	0.457***	-0.128	0.056
Eff_sanction					1	0.381***	-0.012
Eff_prevention						1	-0.088
SUPPORT							1

**Table VI.**  
The Pearson correlations of the regression variables

**Note:** Significance at: \*10, \*\*5, \*\*\*1 percent levels

Variables	DEMAND					
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	13.112*** (19.662)	13.850*** (17.646)	12.842*** (20.207)	12.793*** (18.049)	13.313*** (15.980)	12.837*** (18.492)
Eco	-0.295*** (-3.806)	-0.275*** (-3.603)	-0.299*** (-4.010)	-0.206*** (-2.322)	-0.183* (-1.939)	-0.216** (-2.476)
Law_index						
Eff_sanction						
Eff_prevention						
Position	-0.016 (-0.171)	0.035 (0.379)	0.072 (0.797)	0.094 (0.994)	-0.176* (-1.771)	-0.171* (-1.835)
Department	-0.019 (-0.216)	0.011 (0.123)	0.001 (0.009)	0.008 (0.080)	0.123 (1.443)	0.073 (0.825)
Audit depart	0.122* (1.663)	0.149** (1.988)	0.158** (2.131)	-0.021 (-0.240)	0.055 (0.586)	0.065 (0.690)
Edu	-0.046 (-0.601)	-0.060 (-0.785)	-0.049 (-0.653)	0.137* (1.861)	-0.004 (-0.048)	-0.005 (-0.059)
Adj. R <sup>2</sup>	0.078	0.070	0.086	0.046	0.057	0.164** (2.195)
F	3.942***	3.632***	4.270***	3.439***	3.180***	3.555***
n	193	193	193	193	193	193

Note: Significance at: \*10, \*\*5, \*\*\*1 percent levels

**Table VII.**  
Institutional  
environment, audit  
accountability and the  
demand for GPA

Being added with auditing accountability variables (regression (4)-(6)), the Eco variable remains significantly negative correlation with demand for performance auditing and the coefficient is  $-0.206$ ; Mar\_index variable still has a significant negative correlation with demand for performance auditing, but its influence reduced and the coefficient is  $-0.183$ ; the Law\_index remains significantly negative correlation with demand for performance auditing, whose coefficient is  $-0.216$ . In general, the auditees who are in different institutional environment have significantly different demand for GPA. For those areas where economy is backward and the legal environment falls behind, the auditees there will have higher demand for performance auditing, the results right answer the question raised by *H2*.

In addition, the results of regression (4)-(6) show that the GPA's "sanction intensity" has significantly negative impact on the demand for GPA in the level of 5-10 percent. Putting into three different institutional environment variables in the regression, it has different coefficients as  $-0.184$ ,  $-0.176$ ,  $-0.171$ . However, the "prevention intensity" has no significant effect to the demand for GPA. The results confirm that the sanction intensity has a negative correlation with demand for GPA, which is in support of *H3*. In addition, the personal information of those auditees, such as the level of their administrative position, the level of their working departments and the level of education, have no significant correlation with their demand. Table VII also shows that the respondents who come from the audit system have a significantly higher demand than those from the non-audit system.

The statistics in Table VIII are multivariate analysis results which involve KNOW, SUPPORT, the institutional environment variables, government auditing accountability variables and the control variables in the regression. According to regression (7), the result shows that KNOW has a positive correlation with the demand for performance audit. The coefficient of KNOW is 0.197 and it is significant in the level of 5 percent. While when SUPPORT variable is added, the impact of KNOW variable is no longer significant, indicating that *H1* fail. The impact that SUPPORT has on the demand for

	DEMAND							
	(7)		(8)		(9)		(10)	
_cons	10.787***	(13.436)	9.615***	(11.095)	10.661***	(12.196)	10.491***	(11.409)
Eco					-0.289***	(-3.905)	-0.204**	(-2.401)
Eff_dispose							-0.176**	(-2.003)
Eff_suggest							0.105	(1.264)
KNOW	0.197**	(2.542)	0.108	(1.343)	0.113	(1.459)	0.111	(1.433)
SUPPORT			0.247***	(3.147)	0.239***	(3.168)	0.239***	(3.183)
Department	0.034	(0.365)	0.014	(0.151)	-0.070	(-0.755)	-0.042	(-0.444)
senior								
Position	-0.035	(-0.377)	-0.054	(-0.605)	-0.057	(-0.666)	-0.061	(-0.706)
senior								
Audit depart	0.055	(0.718)	0.049	(0.652)	0.072	(0.994)	0.085	(1.176)
Edu	-0.087	(-1.133)	-0.080	(-1.061)	-0.044	(-0.609)	-0.045	(-0.620)
Adj. R <sup>2</sup>	0.036		0.084		0.156		0.167	
F	2.291**		3.660***		5.581***		4.871***	
n	193		193		193		193	

**Table VIII.**  
Know about GPA,  
organizational support  
and the demand for GPA

**Note:** Significance at: \*10, \*\*5, \*\*\*1 percent levels

performance auditing is significantly positive in the level of 1 percent, whose coefficient is 0.247. Putting the external regional variables (level of economic development and government auditing accountability intensity) into this regression model, the SUPPORT still significantly and positively correlates with the demand. The result confirms *H4* and is logically in line with the empirical results of Cavalluzzo and Ittner (2004) and Yang and Hsieh (2007). In their opinion, the degree of support from executives of the organization towards government performance evaluation activity will significantly affect the level of acceptance from the organization members towards the evaluation activities, thus contributing to carrying out evaluation activities in the organization. The result also shows that the auditees' demand for GPA, to a large extent, is affected by their departments' leaders and their upstream authorities. In addition, Table VIII also shows that the respondents come from auditing system do not show a higher demand than that from non-audit system, which indicates that further improvement for recognition of GPA should be widely conducted among the officers from auditing systems.

*Robustness test.* We perform a few robustness tests:

- Transforming the continuous DEMAND variable into dummy variables and do logistic regression. More specifically, the DEMAND variable equals one if the value of the indicator is above median and zero otherwise. The results are robust to the test.
- In order to ensure the results of this paper are not produced by samples from a certain area, we excluded the samples from three areas where have the largest number of respondents. The three areas include Beijing (27 samples), Shanghai (16 samples) and Jiangxi (13 samples). We used the rest samples for regression and the results are robust.

In addition, we examine the variance inflation factors (VIF) of the model and find that all the independent variables' VIF value are less than 2, indicating that the multicollinearity problem of the regression is not serious and that will not seriously impact on the results of the study.

*Discussion.* First, the empirical results show that the auditees' demand for GPA is lower in the areas where economic development level is higher and legal environment is better. The results seem to be inconsistent with our intuition because some people think that in the economically developed regions the governments are more open-minded, thus the auditees should be easier to accept GPA. However, we can see the results' necessity through deep analysis.

The implementation of performance auditing in all regions of China is a step-by-step projects and it could be fast or slow in different regions. Our survey time is one point in the process of the GPA's development. At this point, economically developed regions already have a high development level and the good legal environment in these areas makes an effective supervision on governments, the state-owned enterprises and other institutions to be audited. The marginal utility brought by further development of GPA is gradually decreasing. Yet in the areas where economic development is backward and legal environment is weak, the performance auditing develops more slowly and further development of GPA will bring relatively higher marginal utility. The auditees' demand for GPA is the reflection of the above analysis. In consideration the empirical results that *H1* is not supported, we argue that: "even for those auditees who have better understanding of the GPA, they actually do not agree that the performance audit



could bring them the expected benefits and their understanding of GPA remains on the negative effect related to supervision and punishment. Then the suggestive effect provided by the performance auditing for the audited entity did not attract enough attention (based on supported *H3*)". In those developed areas where there are high level of GPA supply, the implementation effect of GPA is restrained by lack of auditing standards, poor auditing method, inadequate reward and punishment mechanisms and other factors, thus the performance auditing did not turn out the effect it was supposed to have, which results in the situation that lower demand for GPA in the areas with high level of supply. On one hand, the results reflect that the demands for performance auditing are more likely affected by the current supply levels; on the other hand, the results also reflect that the existing implementation of performance audit did not achieve the desired effect.

The results show that strong accountability intensity of GPA (mainly reflected in the intensity of punishment) would result in a decline of those auditees demand for GPA. Since the audit offices in China is government departments, the essence of government auditing is that when the government use the public property, they let their branch departments to carry out auditing; therefore, in practice there are many issues found in the process of carrying out GPA that many problematic departments or individuals found in GPA have not been reported to relevant authorities and some serious problems have been ignored. Therefore, many scholars and practitioners call on the fact that performance auditing should strengthen the accountability intensity (Wei *et al.*, 2010; Zhang, 2011). The conclusions of this study are the normal psychological reaction of those auditees towards this incident. That is to say, the greater the punishment of GPA is, the stronger the psychological sense auditees will have. However, this conclusion does not deny that auditing results should be used for the performance evaluation or even the job position rising and falling issues of the auditees. In my opinion, a sound regulatory mechanism should be fair and clear in rewards and punishments. In terms of government performance auditing, its audit findings should both positively influence the audited departments and strictly deal with government's non-performance behaviors. Compared with the financial revenue and expenditure auditing, performance audit should be out of the traditional limitations of focusing on investigations and punishments. It should focus more on solving serious problems on the macro level, for example the departments' system and mechanism problems and gradually turn into constructive auditing to improve the audited entity's effectiveness and usefulness (Wang, 2010). At the same time, for those who make use of public resources efficiently and effectively, they should be fully approved. If we merely emphasize the negative effects of the performance auditing, the enthusiasm of carrying out GPA will naturally be deducted. However, at present, China's performance auditing and financial revenues and expenditures auditing are combined with each other. And the results of government auditing are mainly used for sanction or punishment of illegal units or individuals, thus the conclusion of this paper is in line with the actual situation.

### **Conclusion, practical implication and limitations**

Government performance auditing is the trend of developing government audit in modern society. The study of GPA should not neglect those people who are being audited because they are important stakeholders. In this paper, in the way

of survey nationwide, we empirically inspect the institutional environment level, the level of understanding GPA, the level of auditing accountability, organizational support and other factors for their impact on the demand for government performance auditing. The study found that there are really different demands in different institutional environment for GPA. In the areas where are with low level of economic development and poor legal environment, the performance auditing as a powerful monitoring mechanism is more likely accepted by those been audited, while the understanding of GPA did not significantly increase their demand. In the region where there is stronger intensity of audit accountability, auditees have stronger resistance towards the performance auditing. In addition, the officials' preference will not only directly affect the supply of government performance auditing (Zhao *et al.*, 2008) but also will significantly affect the audited departments' demand for performance auditing. The results confirm that those auditees who have perceived higher level of organizational support will have more demand for performance auditing.

The policy implications of this paper are as follows: first, in the process of promoting the development of GPA, the audit offices should concern more about the backward areas, allocate the audit resources effectively, support and assist the development of those backward regions with their development of performance audit, as well as promote a balanced development of performance audit in China. Second, the understanding of GPA should be further strengthened for the officials from both audit system and non-audit system. We should also clarify the relations and differences between performance auditing and financial revenues and expenditures auditing and those between economic responsibility auditing and other forms of auditing and highlight the constructive and suggestive effect that GPA has on the operation of public resources. Third, the performance audit should not only be used at the sanction and punishment for issued departments, it also could be used to help to find out problems and provide recommendations. So that this helps auditees improve their performance and perfect the management level (Liu, 2004). Therefore, the mainland authorities should learn from Hong Kong, Macao, Taiwan and other areas for their audit practice. Before carrying out the audit work in those areas, the auditors will inform the audited entity that which kind of audit it will be, the performance auditing or the other kind of auditing and strengthen the communication with those auditees. Highlight the advantage of performance auditing and weaken their resistance emotion as much as possible. Fourth, we should continue to strengthen the support for the performance audit in government institutions at all levels in all sectors, try hard to create a healthy environment and improve the recognition and the degree of acceptance towards GPA.

In this study, there are the following limitations: first, the empirical study on GPA is still in the preliminary exploration stage. Domestic and foreign literatures about performance auditing are small in number and the model in this paper is relatively simple compared with those researches in mature fields. Besides, there is no mature scale can learn from while measuring the demand and other indicators of performance auditing. The reliability and validity of the designed indicators remains to be further tested. In particular, during the process of measuring, this study used the Likert scale, which has been widely used in the measuring point of view, beliefs and attitudes, so it is suitable for this study. In previous studies, the four- to seven-point scales are widely used by scholars, while this paper choose to use a five-point scale, thus there may be some "central" problem,

that is to say some respondents tend to choose “neutral” attitude. Because of the better internal consistency of five-point scale (Wu, 2003) and the multiple items successfully weaken the “central” problem, this paper still choose the five-point scale. There remains further confirmation about those conclusions. Second, this study takes the way of spreading questionnaires nationwide and randomly selecting survey respondents. Since too much provinces are covered into this survey, most respondents could not be reached by telephone; therefore, the rate of writing back is not high and there is a certain gap between the actual samples and initial expectations. Finally, since there are too many factors that impact on the demand for government performance auditing, this study may have some degree of endogenous problem, which is also worthy of further study.

### Notes

1. The title of GPA is inconsistent among different countries. American like to call it performance audit. While the EU countries, Brigade, Canada, New Sealing, etc. are used to call it the audit for monetary value or best value audit.
2. The data of *China Audit Yearbook* comes from China’s Statistical Database which contains data from 2004 to 2008. Since the year of 2007, the statistical method of provincial audit offices’ data made some changes, thus we choose the data of 2007 and 2008.
3. Huang and Wang (2010) propose three kinds of government auditing accountability. In addition to the two indicators used in this paper, there still is an “exposure intensity”. The reason why we did not use “exposure intensity” is that the intensity calculation is based on “the proportion those people have been put on record accounting for those have been transferred to judicial units” and “the proportion those have been given party discipline sanctions accounting for those have been transferred to discipline inspection department”. However, in some provinces, the number of “those have been transferred to judicial units” is zero, thus the index cannot be calculated.
4. The reasons that dummy variables are used here instead of the numeric variable are as follows: for all of the provinces, the “sanction intensity” and “prevention intensity” vary greatly, which makes the data noisy and may impact on the regression results. Taking “sanction intensity” as an example, the number of Qinghai Province is 8.06 (the number can above 1 because the problematic money found by auditors this year might be repaid or adjusted in the next year or later) but the number of Gansu Province is mere 0.25.

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### Corresponding author

Hui Fan can be contacted at: [huihui8405@163.com](mailto:huihui8405@163.com)

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