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CHINESE GOVERNMENT AUDITING AND ECONOMIC GROWTH: THE MEDIATING EFFECT OF CORRUPTION

AUDITORIA DO GOVERNO CHINÊS E CRESCIMENTO ECONÔMICO: O EFEITO MEDIADOR DA CORRUPÇÃO

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Abstract
Purpose: This study aims to evaluate the effect of government audits in promoting economic growth and curbing corruption in China. Design/Methodology/Approach: This study utilises data from 30 provinces in China from 2010 to 2021, employing Stata data analysis software. This study uses a double-effect multiple regression model to investigate the relationship between government audits and economic growth, as well as the mediating role of corruption. Research Results: Data regression shows that the implementation stage and the accountability and punishment stage of the audit have a significant positive relationship with economic growth. In addition, corruption and economic development are both significantly negatively related. It is worth noting that the implementation stage has a non-significant positive relationship with corruption, resulting in corruption not having a mediating effect between the two at this stage. Fortunately, the accountability and punishment stage of audit has a significant negative relationship with corruption, which confirms that corruption has a partial mediating effect between the two at this stage. Conclusion: The results indicate that although the audit system has been in place for decades, the ability of government audits to curb corruption is limited during the implementation stage compared to the accountability and punishment stage. Audit cannot promote economic growth by controlling corruption at this stage. Practical significance: The results of this study provide essential guidance and

Resumo
Objetivo: Este estudo visa avaliar o efeito das auditorias governamentais na promoção do crescimento econômico e no combate à corrupção na China. Design/Metodologia/Abordagem: Este estudo utiliza dados de 30 províncias na China de 2010 a 2021, empregando o software de análise de dados Stata. Este estudo usa um modelo de regressão múltipla de duplo efeito para investigar a relação entre auditorias governamentais e crescimento econômico, bem como o papel mediador da corrupção. Resultados da Pesquisa: A regressão de dados mostra que o estágio de implementação e o estágio de responsabilização e punição da auditoria têm uma relação positiva significativa com o crescimento econômico. Além disso, a corrupção e o desenvolvimento econômico estão significativamente relacionados negativamente. Vale ressaltar que o estágio de implementação tem uma relação positiva não significativa com a corrupção, resultando na corrupção não tendo um efeito mediador entre os dois neste estágio. Felizmente, o estágio de responsabilização e punição da auditoria tem uma relação negativa significativa com a corrupção, o que confirma que a corrupção tem um efeito mediador parcial entre os dois neste estágio. Conclusão: Os resultados indicam que, embora o sistema de auditoria esteja em vigor há décadas, a capacidade das auditorias governamentais de coibir a corrupção é limitada durante a fase de implementação, em comparação com a fase de responsabilização e punição. A auditoria não

suggestions for the formulation of government audit and anti-corruption policies and prove that it is necessary to formulate more detailed and targeted corruption governance policies. This study recommends re-evaluating the implementation role of government audits and exploring stricter supervision mechanisms and more effective implementation mechanisms.

Keywords: Government Audit. Economic Growth. Implementation Stage. Accountability and Punishment Stage. Corruption Governance.

pode promover o crescimento econômico controlando a corrupção nesta fase. Significado prático: Os resultados deste estudo fornecem orientações e sugestões essenciais para a formulação de políticas de auditoria governamental e anticorrupção e comprovam a necessidade de formular políticas de governança da corrupção mais detalhadas e direcionadas. Este estudo recomenda a reavaliação do papel de implementação das auditorias governamentais e a exploração de mecanismos de supervisão mais rigorosos e de implementação mais eficazes.

Palavras-chave: *Government Audit. Economic Growth. Implementation Stage. Accountability and Punishment Stage. Corruption Governance.*

1 INTRODUCTION

Economic development does not entirely rely on the spontaneous regulation of the market mechanism. Still, the government must provide strong guidance and intervention in resource allocation, public services and risk management (Stiglitz, 1998). In China's typical developmental government system, government intervention plays an irreplaceable role in infrastructure construction, industrial upgrading and regional coordinated development (Naughton, 2007; Ang, 2016). However, the effective exercise of government functions is inseparable from a complete set of supervision and checks and balances mechanisms, among which the government audit system is a vital tool to ensure the standardized operation of government power.

As an essential part of the national governance system and the mechanism for ensuring the safety of public funds, government auditing has multiple responsibilities, including supervising the use of fiscal funds, revealing economic operation risks, and promoting anti-corruption and integrity building (Liu, 2015; Liu, 2017). By ensuring the legality of government revenue and expenditure and improving the efficiency of government fiscal public funds, auditing not only enhances the transparency of government behaviour and strengthens the effectiveness of accountability but also curbs the abuse of public resources and corruption to a significant extent (Liu, 2016). Therefore, government auditing can effectively control corruption and promote high-quality economic development.

China's government audit is a necessary institutional arrangement for supervising the operation of government departments, and it supervises all-around public power, financial funds, and policy implementation effects (Liu, 2015; Liu, 2017; Liu, 2016; National Audit Office of China, 2021). From an operational perspective, it is not only a process of discovering problems, but more importantly, it is the effective implementation of rectification, accountability and accountability mechanisms after the audit (Liu & Lin, 2012). First, the audit finds the amount in question. This process reveals the violations, waste and misappropriation of financial funds in the use process and is a direct quantitative identification of corruption and inefficiency (Su *et al*., 2023; Zhang *et al*., 2022). More importantly, after the audit, the audited unit must rectify the amount in question within the specified time limit.

Second, an audit report and feedback on the findings should be issued to relevant departments and the public as a formal document to improve transparency and accountability. However, discovering the amount of illegal funds and preparing an audit report is only the first step (Li *et al*., 2023). Realizing the audit objectives also depends on effectively adopting and implementing rectification opinions (Liu & Lin, 2012; Su *et al*., 2023; Zhang *et al*., 2022). Third, promote rectification and accountability. When the audit department finds personnel suspected of violating laws and disciplines, it will transfer them to the disciplinary inspection, supervision or judicial organs for handling by the law. Then, the audit department must track and ensure these transferred personnel receive punishment and accountability (Chen *et al*., 2024, 2025).

The above audit procedures form a benign interactive mechanism between corruption control and economic development. On the one hand, auditing reveals and exposes corrupt behaviour, which helps to deter potential corrupt officials and rebuild the government's credibility (Klitgaard, 1988). This can play a full role in the government's role in improving the efficiency of fiscal funds allocation and policy implementation and providing institutional guarantees for economic development (Smidova, 2020; Ferraz & Finan, 2008). This study will reveal whether government auditing can promote economic growth by controlling corruption. The greater contribution is distinguishing between the revelation and rectification results of government auditing.

While numerous studies have explored the relationship between government auditing and economic development, few have examined the mediating role of corruption.

This study aims to fill this gap and provide a new contribution to the growing literature on government auditing, economic development, and corruption governance.

The framework of this study is as follows: First, the critical role of government audit in China's economic development and corruption governance is introduced. Secondly, the literature review clarifies the relationship between China's government and economic growth, as well as the relationship between government audits and corruption. More importantly, the mediating role of corruption is discussed in detail. The research design section outlines the measurement of variables, sample selection, data sources, and models. Additionally, this study details the applicability of the principal component analysis method and the merging process of two audit variables. The results section presents the empirical research findings, followed by a discussion and summary, and proposes suggestions for improvement while acknowledging the study's limitations.

2 LITERATURE REVIEW AND HYPOTHESES

2.1 Government auditing and economic development

Although there are significant differences in economic development levels, institutional environments, and audit system designs among countries around the world, developed countries generally have relatively independent and mature audit systems, while developing countries face problems such as insufficient audit resources and weak accountability mechanisms (Lienert, 2003; Power, 1997), a large number of empirical studies have consistently shown that government audits generally have a governance effect that promotes economic development around the world. This effect is mainly reflected in improving government transparency, optimizing the allocation of fiscal resources, restraining corruption and improving public spending performance (Smidova *et al*., 2022; Wescott, 2008; Morin, 2003; Van Loocke & Put, 2011; Gustavson & Sundström, 2018; Baber, 1983; De Simone *et al*., 2020). In short, government audits have a specific universal policy tool value in different countries and provide important institutional guarantees for global economic governance.

As the Chinese government attaches more importance to the national governance system and governance capacity, the role of government auditing in promoting high-quality economic development has attracted increasing attention from the academic

community. Previous studies (Gao *et al*., 2021; Chen, 2011; Yang *et al*., 2008; Li & Sun, 2023; Liu *et al*., 2018; Li & Xu, 2022; Fang, 2017)generally believe that auditing enhances fiscal transparency and reduces systemic financial risks by revealing loopholes in local fiscal management, such as false reporting of fiscal revenue, illegal charges, and hidden debt growth, thereby providing a stable institutional guarantee for economic development. However, a few studies (Wang, 2016; Qu *et al*., 2018) still believe that government auditing may lead to cautious investment due to overly strict constraints and inefficient administrative efficiency, which negatively impacts the growth rate of local economies.

This study argues that China's government audit, as an institutionalized supervision mechanism, can play a significant governance function in fiscal operations and thus promote economic development. First, during the audit implementation stage, government audits can reveal many hidden violations of fiscal funds (Liu, 2015, 2016, 2017). These behaviours include false reporting of government revenues, misappropriation of special funds, and over-budget expenditures. This enhances the transparency of government fiscal behaviour and sends early warning signals of governance risks to the market. Therefore, government audits have a powerful information monitoring function in maintaining national economic security. Secondly, after the audit finds problems, ordering rectification, accountability, and punishment not only correct specific fiscal violations but also have a strong deterrent effect on other government departments (Liu, 2010). In the long run, these mechanisms will help improve the resource allocation environment and enhance the government's credibility, thereby providing a stable and clean institutional guarantee for the sustained and healthy development of the economy. Thus, the following hypotheses are proposed:

Hypothesis 1: Chinese government audits have the function of promoting economic development (Positive Relationship).

Hypothesis 1a: The implementation stage of government audit has the function of promoting economic development.

Hypothesis 1b: The accountability and punishment stage of government audit has the function of promoting economic development.

2.2 Government auditing and corruption

Many studies in the international academic community have shown that government audits play a key role in curbing corruption. First, audits can enhance information transparency and reduce the space for officials to abuse their power by systematically disclosing the flow and use of public funds (Ferraz & Finan, 2008; Brusca *et al*., 2018; Furqan & Din, 2019; Alt & Lassen, 2006; Santiso, 2009). Second, audits strengthen the accountability mechanism and provide institutional support and evidence basis for exposing and punishing corrupt behaviour, thereby increasing the probability of discovering corruption and the intensity of punishment (Power, 1997; Dye & Stapenhurst, 1998; Ferraz & Finan, 2011; Jeppesen, 2019; Funk & Owen, 2020; Ratmono & Darsono, 2022; Kuntadi *et al*., 2023). Third, the public release of audit results can also trigger media supervision and public attention, further improve the transparency of government behaviour, generate "reputation pressure" and "political costs", and thus deter potential corrupt officials (Ferraz & Finan, 2008; Reinikka & Svensson, 2005; Alt *et al*., 2002; Lindstedt & Naurin, 2010; Berliner, 2014; Fox, 2007). In addition, audits can improve governance efficiency, promote public sector reforms, and fundamentally reduce the institutional soil for corruption (Cangiano *et al*., 2013; Schick, 1998; International Organization of Supreme Audit Institutions, 2010). These mechanisms work together to explain why government audits have been proven to be an effective tool to curb corruption in empirical studies in multiple countries.

Like international research, many Chinese studies believe that government audits play a key role in anti-corruption governance. On the one hand, audit agencies discover illegal amounts and clues to problems through audits of budget execution, fiscal revenue and expenditure, state-owned assets, etc., and form formal audit reports. When necessary, they transfer suspected illegal and disciplinary personnel to disciplinary inspection and supervision or judicial organs, revealing hidden corruption (National Audit Office of China, 2021; Liu & Lin, 2012; Zhang *et al*., 2022). On the other hand, audits also promote the audited units to improve management and strengthen internal control and system construction through subsequent rectification, accountability and handling measures, thereby reducing the space for corruption to occur from the root (Liu & Lin, 2012; De Renzio & Wehner, 2017; Funnell & Wade, 2012). In other words, government audits have

both the function of revealing corruption and the institutional effect of controlling and preventing corruption. Therefore, this study proposes the following hypothesis:

Hypothesis 1: Chinese government audits have the effect of controlling corruption (Negative Relationship).

Hypothesis 1a: The implementation stage of government audit has the effect of controlling corruption.

Hypothesis 1b: The accountability and punishment stage of government audit has the effect of controlling corruption.

2.3 The mediating effect of corruption on government auditing in promoting economic development

International studies have shown that (Liu & Lin, 2012; Ferraz & Finan, 2011; Assakaf *et al*., 2018; Olken, 2007; Mauro, 1995; Mo, 2001) the role of government audits in promoting economic growth may not be achieved directly but indirectly through the mechanism of curbing corruption. In the experience of many countries, a strong audit system can reveal fiscal irregularities and waste of resources, strengthen the government accountability mechanism, and thus reduce corruption (Malagueño *et al*., 2010; Avis *et al*., 2016). Reducing corruption will help improve investment efficiency, optimize resource allocation and enhance institutional trust, creating an environment conducive to economic growth (Wei & Shleifer, 2000; Lambsdorff, 2003; Acemoglu & Robinson, 2013). Therefore, corruption may mediate between government audits and economic development, becoming a vital path variable connecting audit supervision and financial performance improvement.

Corruption may be an essential intermediary in China's governance practice between government audit and economic development. Government audits can suppress corruption by revealing fiscal irregularities and waste of resources and promoting accountability mechanisms. In contrast, controlling corruption further creates a good institutional environment for economic development. First, the discovery of the amount in question during the audit process, the issuance of audit reports and the transfer of suspected corrupt personnel reflect the government audit's ability to discover. Its role is mainly reflected in the information disclosure and warning levels, which help to enhance public supervision and administrative transparency. These systems significantly improve

the deterrent effect of audits and impose substantial constraints on officials' behaviour, thereby reducing resource misallocation and rent-seeking behaviour and clearing obstacles to economic development (National Audit Office of China, 2021; Liu & Lin, 2012; Chen *et al*., 2024, 2025). Finally, the rectification, punishment and accountability procedures after the audit are the core links in achieving the audit governance effect. The degree of implementation directly determines whether the audit can truly reduce corruption. It ultimately determines the improvement of the investment environment and the efficiency of public spending, thereby promoting economic growth (National Audit Office of China, 2021; Liu & Lin 2012; Su *et al*., 2023; Chen *et al*., 2024).

Even though both international and Chinese studies have recognized that corruption mediates the relationship between government auditing and economic development, no empirical research has yet investigated this effect. This study fills this gap, reveals the relationship between the three, and empirically examines whether China's current corruption has this mediating effect. Hence, this study proposes the following hypothesis:

Hypothesis 1: Corruption has the effect of mediating between Chinese government audit and economic development.

Hypothesis 1a: Corruption has the effect of mediating between Chinese government audit implementation stage and economic development.

Hypothesis 1b: Corruption has the effect of mediating between Chinese government audit accountability and punishment stage and economic development.

3 RESEARCH DESIGN AND RESULTS

3.1 Research variables, samples, and data sources

The dependent variable of this study is economic growth (EG), measured by the GDP per capita of each province, which is consistent with several previous studies (Chen *et al*., 2024; Zhu, 2017; Chan *et al*., 2019; Xu *et al*., 2017; Li *et al*., 2021). The dependent variable of this study is economic growth (EG), which is measured by the GDP per capita of each province. This is consistent with several previous studies. The government audit is the independent variable, which is divided into two stages: the audit implementation stage (WPCA1) and the accountability and punishment stage (WPCA2).

The audit implementation stage is measured by three indicators found in the audit, namely the amount in question (Liu & Lin, 2012; Su *et al*., 2023; Chen *et al*., 2024), the audit report (Liu & Lin, 2012), and the persons transferred by the audit (Su *et al*., 2023; Zhang *et al*., 2022; Chen *et al*., 2024). Three indicators measure the audit accountability and punishment stage after the audit. They are the rectification of the amount in question (Liu & Lin, 2012; Chen *et al*., 2024), the adoption rate of audit opinions (Su *et al*., 2023; Zhang *et al*., 2022), and the punishment of the transferred persons (Chen *et al*., 2024). To comprehensively consider the status of each audit stage, this study employs the weighted average principal component analysis method (WPCA) to consolidate the three indicators into a single independent variable.

This study uses the degree of corruption (Corr) as a mediating variable. This study draws on previous studies (Liu & Lin, 2012; Su *et al*., 2023; Li *et al*., 2023; Hao 2019; Chen *et al*., 2024, 2025) and uses the number of corrupt officials in each province to measure this variable. The more corrupt officials there are, the more serious the corruption is. In addition, this study also selected three control variables: government fiscal revenue (GFR), salary level (SL) and degree of openness (OP). Referring to previous studies (Chen *et al*., 2024; Jia *et al*., 2014), government fiscal revenue is measured by the ratio of provincial government revenue to GDP. Salary level is measured by the ratio of the average salary of state-owned units in each province to the average salary of all employees in the province (Chen *et al*., 2024, 2025; Xu *et al*., 2017). The degree of openness is measured by the ratio of total trade volume to GDP (Chen *et al*., 2024, 2025).

Since 2010, China has become the world's second-largest economic contributor (Morrison, 2013), and various government policies have also undergone tremendous changes. In addition, given the availability and accuracy of corruption data, this study draws on previous studies (Chen *et al*., 2024, 2025) and selects 30 provinces in China (excluding Hong Kong, Macau, Taiwan, and Tibet) from 2010 to 2021 as its research samples, totalling 360 samples. The data on the mediating variable corruption comes from the annual procuratorial work reports of each province. The data of the independent variable comes from the China Audit Yearbook. The data for the dependent variable, economic growth, and the three control variables are all from the statistical yearbooks of the 30 provinces.

3.2 Research model

This study used Stata software version 17.0 for data regression analysis. Based on hypothesis 1 (1a, 1b), the following model was designed:

$$EGi,t = \beta0 + \beta1WPCA1i,t + \beta2GFRi,t + \beta3SLi,t + \beta4OPi,t + \alpha i + \lambda t + \varepsilon i,t$$
$$EGi,t = \beta0 + \beta1WPCA2i,t + \beta2GFRi,t + \beta3SLi,t + \beta4OPi,t + \alpha i + \lambda t + \varepsilon i,t$$

Based on Hypothesis 2 (2a, 2b), this study proposes the following model:

$$Corri,t = \beta0 + \beta1WPCA1i,t + \beta2GFRi,t + \beta3SLi,t + \beta4OPi,t + \alpha i + \lambda t + \varepsilon i,t$$
$$Corri,t = \beta0 + \beta1WPCA2i,t + \beta2GFRi,t + \beta3SLi,t + \beta4OPi,t + \alpha i + \lambda t + \varepsilon i,t$$

Based on Hypothesis 3 (3a, 3b), this study proposes the following model:

$$EGi,t = \beta0 + \beta1WPCA1i,t + \beta2Corr1i,t + \beta3GFRi,t + \beta4SLi,t + \beta5OPi,t + \alpha i + \lambda t + \varepsilon i,t$$
$$EGi,t = \beta0 + \beta1WPCA2i,t + \beta2Corr2i,t + \beta3GFRi,t + \beta4SLi,t + \beta5OPi,t + \alpha i + \lambda t + \varepsilon i,t$$

The data contains provinces (i) and periods (t). Individual, regional, and time effects are controlled by dummy variables (αi, βi, and λt), and the error term is represented by ε. According to the proposed hypothesis, the coefficients of the independent variable (WPCA) are expected to be positive, which indicates that government auditing can promote economic growth.

3.3 Principal component analysis and variable merging

As shown in Table 1 below, the overall KMO value for the audit implementation stage (WPCA1) is 0.6093, which exceeds 0.6, indicating that the data are suitable for principal component analysis. Although the structure is not particularly robust, it can still be utilised for dimensionality reduction. The overall KMO value for the audit accountability and punishment stage (WPCA2) is 0.5100, which is slightly higher than the ideal value of 0.5. Kaiser (1974) and Hair *et al*. (2010) both suggest that a KMO value greater than 0.5 and less than 0.6 is at the critical level of "barely usable" (Kaiser, 1974; Hair Jr *et al*., 2010). Regarding the covariance matrix test (mvtest), the p-values of both WPCA1 and WPCA2 are significant (<0.01), indicating a significant correlation between

the variables. Since the covariance matrix is not diagonal, Principal Component Analysis (PCA) is a suitable dimensionality reduction method.

The weight of each variable is calculated based on the ratio of the eigenvalue of the principal component in the fourth column of the table to the sum of the three audit variables (Jolliffe, 2002). Then, based on the data in the fifth column, the corresponding principal component scores are extracted by linearly combining the standardized variables according to the principal component loads (Hair Jr *et al*., 2010; Jolliffe, 2002). Finally, the weight of each variable is multiplied by the corresponding principal component score, and the three multiplications are added together to generate new variables WPCA1 and WPCA2. In this manner, the weighted average principal component analysis method is employed to combine the three audit indicators into a comprehensive score variable. This method can effectively reduce the risk of multicollinearity while retaining the main information and enhancing the scientific validity and explanatory power of the results through eigenvalue weighting.

Table 1

Principal component analysis and variable merging

Variables	**KMO**	MVTEST	Eigenvalue	Comp1	Comp2	Comp3
AQ	0.5854	Adjusted LR chi2(3) = 88.90 Prob > chi2 = 0.0000	1.59321	0.6165	-0.1886	-0.7644
AR	0.6057		0.779249	0.5824	-0.5441	0.6040
TP	0.6565		0.627546	0.5298	0.8176	0.2256
Overall WPCA1	0.6093					
RA	0.5064	Adjusted LR chi2(3) = 118.22 Prob > chi2 = 0.0000	1.55822	0.6917	-0.1045	-0.7145
AAO	0.5898		0.964185	0.2686	0.9557	0.1203
PAP	0.5069		0.477599	0.6703	-0.2752	0.6892
Overall WPCA2	0.5100					

3.4 Descriptive statistics and pearson's coefficient analysis

3.4.1 Descriptive statistics

Table 2 shows the maximum, minimum, mean and standard deviation of each variable. Among them, the minimum and maximum values of the dependent variable (EG) are 1.29 and 18.4, respectively, and the standard deviation is 2.885, which means that the per capita GDP of each province fluctuates wildly between different years and

provinces, which also reflects the apparent problem of unbalanced regional economic development in China. The mean value of 5.421 indicates that China's economy transitioned from high-speed growth to medium-high growth during the study period.

For the independent variables (WPCA1 and WPCA2), the mean of both results after principal component analysis is 0, indicating that both variables have been standardised and the entire dataset is balanced. The standard deviations are 0.7276 and 0.7294, respectively, suggesting that most of the data fall within 0.73. The fluctuations of the two variables are similar, but WPCA2 is more dispersed and tends to be more right-skewed. The minimum values are -0.97 and -2.01, indicating that the audit implementation stage (WPCA1) and the accountability and punishment stage (WPCA2) have very weak effects in a few provinces. The maximum values are 5.25 and 7.87, indicating specific gaps between provinces in the two stages, with the accountability gap being larger.

For the mediating variable (Corr), the standard deviation is 935 people, indicating that the number of corrupt individuals in various provinces in China fluctuates significantly and is unevenly distributed. In addition, the maximum value of 4523 is 250 times the minimum value of 18, indicating that the level of corruption varies significantly among provinces. The mean value of 1,295 people also shows that corruption in China remains rampant. For the control variables, the maximum and minimum values of the three variables indicate that government fiscal revenue, wage level, and degree of openness in various provinces in China vary considerably. In terms of the comparison between the standard deviation and the mean, the numerical distribution of GFR shows that the trend is relatively concentrated. The trend of SL is slightly right-skewed, but the OP shows a strong right-skewed trend.

Table 2

Descriptive Statistical Analysis

Variables	Count	Min	Max	Mean	Std	VIF
EG	360	1.29	18.4	5.421139	2.884531	—
WPCA1	359	-0.96720	5.24771	-1.67e-10	0.7275808	1.74
WPCA2	359	-2.01102	7.86814	1.13e-09	0.7294374	1.44
Corr	359	18	4523	1295.329	935.7535	1.39
GFR	360	0.06	0.25	0.1139722	0.0315884	1.69
SL	359	93	322	119.0752	31.4888	1.53
OP	360	0.01	1.46	0.2770833	0.294154	1.87

3.4.2 Pearson's coefficient analysis

The Pearson coefficient analysis in Table 3 reveals that the relationship between the dependent variable EG and each variable is as follows: it has a positive relationship with the audit variable WPCA2, which is consistent with the initial judgment and hypothesis. However, WPCA1 exhibits a negative relationship contrary to the hypothesis. It has a negative relationship with the mediating variable Corr, which is consistent with the hypothesis. The three control variables have a positive relationship with EG. In addition, the two audit-independent variables have a positive relationship with the mediating variable Corr, which is inconsistent with the hypothesis.

Table 3

Pearson's Coefficient Analysis

Variables	EG	WPCA1	WPCA2	Person	GFR	SL	OP	**VIF**
EG	1.0000							—
WPCA1	-0.0755	1.0000						1.74
WPCA2	0.1255	0.5229	1.0000					1.44
Person	-0.3316	0.4749	0.2221	1.0000				1.39
GFR	0.3360	-0.3950	-0.3412	-0.3341	1.0000			1.69
SL	0.5010	-0.0663	0.0191	-0.1710	0.2903	1.0000		1.53
OP	0.6297	-0.1626	-0.1288	-0.0943	0.5138	0.5638	1.0000	1.87

3.5 Regression Results

The regression results are shown in Table 4. For the audit implementation stage (WPCA1), the audit implementation stage and the dependent variable EG in Model 1 have a significant positive relationship, indicating that for every 1-point increase in WPCA1, economic growth EG increases by an average of 0.3591 points, which also confirms that the audit implementation stage can promote economic development. However, in Model 3, WPCA1 and corruption Corr have a positive insignificant relationship, which indicates that the audit implementation stage has almost no inhibitory effect on corruption.

In Model 5, WPCA1 and the dependent variable remain significantly and positively correlated. Specifically, for every 1-point increase in WPCA1, economic growth (EG) will increase by an average of 0.4388 points. Corr and EG are significantly negatively correlated, indicating that for every 1-point increase in corruption, EG will

decrease by an average of 0.0010 points. It also confirms that corruption can inhibit economic growth. More importantly, since WPCA1 has no significant effect on corruption in Model 2, this suggests that corruption does not mediate the relationship between WPCA1 and economic growth during the implementation stage of the audit.

For the audit accountability and punishment stage (WPCA2), the audit WPCA2 in model 2 has a significant positive correlation with the dependent variable EG, indicating that for every 1 point increase in WPCA2, economic growth (EG) will increase by an average of 0.6710 points, which also confirms that the audit accountability and punishment stage can promote economic development. In addition, in model 4, WPCA2 has a significant negative correlation with corruption (Corr), indicating that for every 1-point increase in WPCA2, corruption (Corr) decreases by an average of 122.2779 points. This confirms that the audit accountability and punishment stage can effectively curb corruption.

In Model 6, WPCA2 maintains a significant positive correlation with the dependent variable. Specifically, for every 1-point increase in WPCA1, economic growth (EG) will increase by 0.5500 points on average. Corr is significantly negatively correlated with EG, indicating that for every 1-point increase in corruption, EG will decrease by 0.0009 points on average. More importantly, since the coefficient value of WPCA2 in Model 6 is 0.121 less than that in Model 2, this indicates that in the audit accountability and punishment stage, the degree of corruption has a partial mediating effect on the relationship between WPCA2 and economic growth (EG).

Table 4

Regression Results

Dependent Variable	EG		Corr		EG	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
WPCA1	0.014** (0.3591)		0.260 (80.5252)		0.001*** (0.4388)	
WPCA2		0.000*** (0.6710)		0.030** (-122.2779)		0.000*** (0.5500)
Corr					0.000*** (-0.0010)	0.000*** (-0.0009)
GFR	0.000*** (-30.5317)	0.000*** (-28.8660)	0.000*** (11855.92)	0.000*** (11928.87)	0.000*** (-19.7423)	0.000*** (-18.8737)
SL	0.037** (0.01859)	0.048** (0.0167)	0.001*** (-14.2986)	0.004*** (-12.6721)	0.678 (0.0033)	0.547 (0.0046)
OP	0.000*** (-11.1739)	0.000*** (-10.4180)	0.003*** (1150.481)	0.020** (897.1769)	0.000*** (-10.0345)	0.000*** (-9.6285)
N	358	358	357	357	357	357
F-statistic	68.47	82.89	13.95	14.90	91.37	100.39
R	0.4581	0.5058	0.1473	0.1557	0.5866	0.6092

Note: p < 0.01: '***', p < 0.05: '**', p < 0.1: '*', which show that the regression coefficient is significant at the levels of 1%, 5%, and 10%.
The brackets show the coefficient values.

4 DISCUSSION

Regarding the audit implementation stage (WPCA1), both Model 1 and Model 5 confirm that this stage can effectively and directly promote economic growth. However, Model 3 confirms that this stage of audit cannot effectively curb the extent of corruption, which aligns with the research results of Liu and Lin (2012). In addition, at this stage of the audit, Model 5 also found that corruption directly hinders economic growth and has no mediating effect in promoting economic development through government audits.

Regarding the audit accountability and punishment stage (WPCA2), both Model 2 and Model 6 confirm that this stage can effectively and directly promote economic growth. In addition, Model 4 also confirms that this stage of audit can effectively curb corruption, which aligns with the research results of Liu and Lin (2012). More importantly, at this stage of the audit, Model 6 not only finds that corruption directly hinders economic growth but also has a partial mediating effect in promoting economic development through government audits.

5 CONCLUSIONS

This study examines government audit data from 30 provinces in China from 2010 to 2021 to assess their impact on corruption and economic growth. The results indicate that both the audit implementation stage and the accountability and punishment stage can have a direct and significant effect on promoting economic development. Additionally, corruption hinders economic growth at both stages of the audit process. It is worth noting that corruption affects mediating the relationship between audit and economic growth only during the accountability and punishment stage of the audit. These findings provide important insights into the role of audit in economic development and provide valuable guidance for the formulation of corruption governance policies.

Implications: The study's results emphasise that the audit implementation stage has little effect on curbing corruption, indicating that audits cannot promote economic growth by controlling corruption. This result highlights the problem that corruption in

China often precedes governance (Rose-Ackerman & Palifka, 2016; Meagher, 2005). This lagging governance mechanism has led to the failure and even aggravation of supervision and control. Local governments in China have considerable discretionary space in resource allocation and operational power. At the same time, the existing audit supervision system is often based on post-corruption supervision, lacking foresight and prevention and making it difficult to detect and curb power rent-seeking behaviour in advance. This lagging governance system creates opportunities for local government officials to engage in rent-seeking behaviour (Persson *et al*., 2013).

Limitations: This study acknowledges some limitations. First, this study only considers two audit stages, each of which contains only three pieces of information, which may not fully cover the functions of government audits. Second, although the corruption data come from the annual work reports of provincial procuratorates, the separation of government agency functions and the adjustment of anti-corruption policies in 2018 led to statistical inconsistencies in the identification criteria and classification of corrupt officials, which may result in certain deviations in the number of corrupt officials.

Future Research Suggestions: Given the limitations of this study, future research should focus on the following areas to further improve the understanding of the relationship between government auditing, corruption, and economic development. First, more detailed audit indicators should be considered to comprehensively assess the mediating effect of corruption on the relationship between the two. Second, future research should collect data through multiple channels and in various ways to overcome data limitations and inconsistencies resulting from changes in anti-corruption policies and government agency structures.

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DATA AVAILABILITY

Data will be made available on request.

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