



National Auditing, Common Prosperity, and New Quality Productive Forces

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Abstract— This study utilizes panel data from 30 Chinese provinces (municipalities and autonomous regions) spanning 2010 to 2021 to empirically examine the impact of national auditing on new quality productive forces. The findings reveal that national auditing plays a significantly positive role in enhancing the level of new quality productive forces. Specifically, common prosperity exerts a significant mediating effect on the relationship between national auditing and new quality productive forces. Heterogeneity tests indicate that the eastern region, with its well-established auditing systems, high-quality talent, and advanced informatization, enables more effective fulfillment of supervisory functions. Conversely, the western region demonstrates more pronounced outcomes in common prosperity, leading to a stronger driving effect on new quality productive forces.

Keywords— National Auditing, New Quality Productive Forces, Common Prosperity



I. INTRODUCTION

New-type productive forces represent an advanced state of productive capacity characterized by innovation as the primary driver, breaking away from traditional economic growth models and development paths. They embody high technology, high efficiency, and high quality, aligning with the new development philosophy. Since 2023, General Secretary Xi Jinping has repeatedly emphasized the importance of new-quality productive forces in various settings, viewing them as both an intrinsic requirement and a key focus for advancing high-quality development. This provides robust theoretical and practical guidance for China to accelerate the formation of new-quality productive forces and promote high-quality development in the new era. Currently, the world is undergoing accelerated transformation, with technological and industrial revolutions advancing deeply. However, economic globalization faces obstacles, and trade and investment are contracting. Against this backdrop, new-quality productivity has become a strategic choice for building new competitive advantages for the nation. Furthermore, as China's economy transitions to a stage of high-quality development, developing new-quality productivity is an

inevitable choice for promoting the optimization and upgrading of the economic structure, enhancing independent innovation capabilities, and achieving high-quality development.

National auditing serves as a vital force in advancing the modernization of the national governance system and governance capabilities. General Secretary Xi Jinping has repeatedly emphasized that auditing authorities must focus on their primary responsibilities, deepen reform and innovation, and establish a centralized, unified, comprehensive, authoritative, and efficient auditing oversight system. This system will safeguard high-quality economic and social development and elevate the level of new productive forces through high-quality auditing oversight. Serving as the "immune system" of the national governance system, state audit primarily functions through oversight, evaluation, and early warning mechanisms. It facilitates policy implementation, standardizes the exercise of power, promotes the rational allocation of resources, and enhances resource utilization efficiency. These efforts collectively advance high-quality economic and social development and achieve common prosperity. Furthermore, state audit contributes to elevating new-quality productive

forces by ensuring policy execution, optimizing the allocation of innovation resources, fostering a favorable business environment, providing financial safeguards, and implementing risk prevention and mitigation mechanisms.

Currently, some research has been conducted on the impact of national auditing on the level of new-type productive forces. However, this paper introduces new mediating variables for further exploration. Specifically, it aims to examine how national auditing influences the level of new-type productive forces and whether common prosperity mediates the relationship between national auditing and this level. Additionally, the study will investigate whether these effects exhibit regional heterogeneity across eastern, central, and western China. This paper will delve into the mechanism through which national audits affect new-type productive forces, propose a hypothesis that national audits promote the enhancement of new-type productive forces, and conduct empirical tests using econometric models.

This study seeks to contribute in the following aspects: First, building upon existing research on national audits and new-type productive forces, this paper innovatively integrates two variable measurement methods, providing a new perspective for analyzing the positive impact of national audits on new-type productive forces and enriching empirical research. Second, it innovatively introduces common prosperity as a mediating variable, delving into its transmission role between national audit and new-type productive forces. This reveals how national audit indirectly advances new-type productive forces by promoting common prosperity, enriching research on operational mechanisms. Third, adopting a regional heterogeneity approach, this study divides the nation into eastern, central, and western regions for grouped regression analysis. This reveals regional variations in the impact of national auditing on new-type productive forces, offering policy-making references for different regions and expanding the practical value of the research.

II. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1 Literature Review

New quality productive forces represent an advanced form of productivity that evolves from traditional productive forces through deepened integration between accelerated technological innovation and high-end industries [3]. Guided by the new development philosophy, driven by technological innovation as the core, and advanced through industrial upgrading [4], they serve the strategic objectives of Chinese modernization [5]. Their development is influenced by multiple factors: the flow of

technological collaboration facilitates efficient reorganization of innovation factors and promotes breakthroughs in core technologies; the scaled development of strategic emerging industries builds growth engines [6], enhancing resource allocation efficiency through industrial chain coordination; and the forward-looking cultivation of future industries, empowered by digital technologies [7], shapes new competitive advantages in the global value chain. Digital governance improves the business environment, reduces institutional transaction costs, and fosters market competition and efficient resource allocation, creating an institutional framework where an effective market and a capable government function in synergy [8]. In this process, national auditing fulfills critical governance roles—such as monitoring policy implementation, preventing resource misallocation risks, and ensuring fairness within the innovation ecosystem—by exerting influence over key areas including innovation policy execution, allocation of R&D funds, and intellectual property protection [8]. It not only optimizes resource allocation [9] but also safeguards the fairness of the innovation ecosystem, thereby building institutional safeguards for the qualitative upgrading of productive forces and ensuring that innovation outcomes translate into sustained drivers of high-quality development [10]. Conversely, new quality productive forces create a reverse forcing mechanism through technological means, driving the deepened application of digital tools such as blockchain auditing and intelligent risk early warning systems. This promotes the upgrading of audit models and helps auditing to precisely focus on areas such as safeguarding industrial chain security and enhancing the level of digital inclusive finance [11], collectively advancing high-quality economic development and the realization of common prosperity.

The institutional value of national auditing is rooted in the inherent requirements of modernizing national governance [12]. Its functions and roles are reflected through three theoretical foundations: First, the theory of national governance requires auditing to serve as a core mechanism for enhancing governance efficacy by maintaining fiscal and economic discipline, standardizing policy implementation, and preventing systemic risks [13]. Second, the immune system theory endows auditing with the functions of "prevention, exposure, and resistance"—that is, deterring illegal activities ex-ante, supervising policy implementation and resource allocation efficiency during processes, and rectifying deviations while enforcing accountability ex-post—thereby safeguarding economic security and social stability [14]. Third, the accountability theory emphasizes that auditing ensures the operation of public power aligns with public interests and guarantees the

equitable sharing of development outcomes by checks and balances on public power and supervision of responsibility fulfillment [15]. Together, these three aspects explain the foundational role of national auditing in optimizing governance systems [16], standardizing power operation, and promoting social equity. They highlight its institutional value in balancing efficiency and fairness [17], and further demonstrate its role in supplying institutional innovations in emerging fields such as digital inclusive finance and green urbanization, underscoring the cornerstone function of audit supervision in national governance. New-type productive forces and national auditing jointly constitute a dual-drive mechanism for achieving common prosperity [18]. The former reshapes wealth creation models through factor upgrading [19], expanding the middle-income group [20][21] while also confronting challenges of distributional imbalances caused by technological bias. The latter builds a safeguarding network for sharing development outcomes through institutional designs such as social security auditing and regional coordination oversight [22]. Specifically, audit oversight of digital inclusive finance both facilitates the downward flow of financial resources and prevents regional disparities stemming from technological monopolies [22]. Meanwhile, audit evaluations of human capital allocation policies drive the optimization of educational resources [23], mitigating income gaps caused by skill premiums. Notably, eastern regions demonstrate greater exemplary value in leveraging synergistic effects due to mature audit implementation mechanisms and robust digital infrastructure [22]. This virtuous cycle of productivity innovation and governance enhancement offers a Chinese solution to resolving the dual paradox of efficiency and equity.

Existing relevant research literature reveals the following: ① New-type productive forces represent a new form of productivity driven by innovative technology, influenced by multiple factors; ② National auditing plays a broad role in national governance and economic oversight, interacting with new-type productive forces to jointly advance the level of common prosperity; ③ No studies have yet explored the reciprocal effect of common prosperity on new-type productive forces. These research conclusions provide new perspectives and directions for this study.

2.2 Research Hypotheses

As a vital pillar of modernizing national governance, the logic underpinning state audit's role in advancing new-quality productive forces stems from the theoretical core of public fiduciary economic responsibility. The defining characteristics of new-quality productive forces—innovation-driven technology, efficient resource allocation,

and adaptive institutional support—find structural alignment with state audit's oversight functions through three mechanisms: Through tracking audits of policy implementation, it reveals deviations in executing specialized policies for technological innovation and industrial upgrading (e.g., idle funds, delayed supporting measures), compelling dynamic optimization of the policy system and establishing institutional safeguards for new-quality productive forces. Second, the resource allocation mechanism. Through comprehensive oversight of fiscal-financial and resource-environmental audits, it identifies structural contradictions like inefficient R&D investment and barriers to factor mobility, promoting the precise concentration of innovation resources in strategic sectors such as the digital economy and green economy. Third, the risk prevention and control mechanism. Leveraging the closed-loop preventive-detection-mitigation functions of the audit "immune system," this mechanism reduces systemic risks in new-quality productivity development through emerging industry risk warnings (e.g., signs of overcapacity), market order maintenance (combating monopolistic practices), and rectification accountability mechanisms. Through the synergistic action of these three mechanisms, national audits substantially dismantle institutional barriers constraining productivity leaps by continuously optimizing the policy environment, factor allocation efficiency, and market ecology. Based on the above analysis,

Propose Hypothesis 1: National Auditing Enhances New Quality Productivity Levels.

The theoretical logic of national auditing advancing common prosperity rests on dual underpinnings: public fiduciary economic responsibility and state governance theory. By overseeing the efficiency of public resource allocation and the standardization of government duties, it ensures equitable sharing of development outcomes. In practice, national auditing synergizes through four pathways: First, policy implementation audits focus on livelihood sectors like education and healthcare, correcting execution deviations to promote equitable access to basic public services [26]; Second, fiscal fund audits strengthen budgetary constraints and performance management, ensuring precise allocation of resources for social security, transfer payments, and other programs. Third, economic responsibility audits regulate the exercise of power, curbing violations in resource distribution. Fourth, ecological and environmental audits oversee green development policies, balancing economic growth with environmental protection. Based on the above analysis

Propose Hypothesis 2: National Auditing Can Advance the Process of Common Prosperity.

As the social foundation for developing new productive forces, common prosperity promotes progress through three mechanisms: First, the mechanism for optimizing factor allocation. By narrowing urban-rural and regional development gaps, it guides factors such as labor and capital to overcome geographical and institutional barriers, concentrating them in high-efficiency sectors like the digital economy and green technology to enhance total factor productivity. Second, the innovation ecosystem cultivation mechanism. Rising household incomes and consumption upgrades generate substantial market demand, stimulating corporate technological innovation. Equalized public services enhance workers' skills and qualifications, providing emerging industries with compatible human capital. Third, the institutional environment reinforcement mechanism. Reasonable distribution of social wealth enhances development stability, while government policies—such as optimizing the business environment and strengthening intellectual property protection—reduce innovation risks in emerging fields. Throughout this process, national auditing ensures substantive progress toward common prosperity by overseeing the fairness of resource allocation, the effectiveness of policy implementation, and the standardization of power operations. This provides triple empowerment for developing new-quality productive forces: optimized factor allocation, stimulated innovation momentum, and strengthened institutional support. Based on the above analysis

Propose Hypothesis 3: National auditing can promote the development of new quality productive forces through common prosperity.

III. STUDY DESIGN

3.1 Sample Selection and Data Sources

Given the availability of data, this study utilizes panel data from 30 provinces in China (excluding Tibet) covering the period 2010–2021 as its research sample. National audit-related data is sourced from the China Audit Yearbook; Data on provincial-level development levels of new quality productive forces nationwide were sourced from the China Statistical Yearbook, China Energy Statistical Yearbook, China Industrial Statistical Yearbook, China Environmental Statistical Yearbook, the National Energy Administration, and provincial statistical yearbooks. The common prosperity index for each province was derived from the China Statistical Yearbook. Control variables and related data were obtained from the China Statistical Yearbook covering the period 2010–2021. Due to severe data gaps in key indicators for some provinces or regions, these were excluded, resulting in 360 sample

observations across 30 provinces (municipalities and autonomous regions) from 2010 to 2021. Continuous variables underwent Winsorization tail trimming at the 1% and 99% percentiles. Data processing and analysis were conducted using Stata 17.

3.2 Variable Definition

3.2.1 dependent variable

New Quality Productivity Level (NQP): Drawing upon the research of scholars such as Ren Yuxin and Wu Yan [27], this paper constructs a three-tier indicator system for new quality productivity. The primary tiers are defined by the criteria of laborers, means of labor, and objects of labor. Eighteen secondary indicators are employed, including economic output, economic income, employment structure, educational attainment, training funding, knowledge accumulation potential, and innovative spirit. Using the entropy method to determine the weights of indicators at each level, the development levels of new quality productivity for each province from 2010 to 2021 were subsequently calculated.

3.2.2 Core explanatory variable

National Audit: Drawing upon the research of Shu Chenglin and Song Da [28], this paper constructs a measurement indicator system for national audit based on its three functions: prevention, detection, and deterrence. The prevention function is measured by the natural logarithm of the ratio between the amount of audit dispositions implemented and the amount of major issues identified through audit. The detection function is measured by the natural logarithm of the ratio between the amount of major issues identified through audit and the number of audited entities. The deterrence function is measured by the ratio of audit opinions issued to the number of audited entities. Given the equal importance of each function, drawing on Guo Mengnan et al.'s research, an evaluation indicator system for national audit is constructed using a weighted average method with equal weighting applied to each function.

3.2.3 Mediating variable

Drawing on the methodology of scholars such as Han Liangliang and Peng Yi [29], an indicator system for common prosperity is constructed based on three dimensions: developmental, shared, and sustainable. Specific indicators encompass affluence level, shared prosperity, cultural education, healthcare, infrastructure, informatization level, social security, technological innovation, ecological environment, and development quality. Principal component analysis is employed to determine the weight of each indicator, and a composite

score is calculated to ultimately form the common prosperity index.

3.2.4 Control variables

Following existing literature practices, this study incorporates the following control variables into the model: Information Level (Info) is measured by the ratio of postal and telecommunications business volume to regional GDP. A higher value indicates greater informatization in the region and a larger contribution of information and communication technologies to economic development; Industrial Structure (Indu) is measured by the ratio of tertiary industry output to secondary industry output. A higher value indicates a larger share of the tertiary sector in the region's total industry, signifying a more optimized economic structure that positively impacts the development of new productive forces; Social Consumption Level (Consum) is measured by the ratio of total retail sales of consumer goods to regional GDP. Elevated social consumption levels positively propel the development of

new-quality productive forces. This not only fosters technological innovation and industrial chain optimization but also drives economic restructuring and upgrading through demand-side traction generated by consumption upgrades. Environmental regulation intensity (Envir) is measured by the ratio of regional industrial pollution control investment to regional GDP. Environmental regulation intensity exerts a complex influence on the development of new-quality productive forces. Appropriate environmental regulations can promote technological innovation and growth in green total factor productivity, but excessively stringent environmental regulation intensity may negatively impact production efficiency and industrial competitiveness. Labor Resource Level (LR) is measured by taking the logarithm of the number of employed persons. A higher value indicates greater labor resources, a more active labor market, and stronger economic development potential in the region. Additionally, this study controls for the fixed effect of year (Year).

Table 1 Variable Definitions

Variable Type	Variable Name	Variable Symbol	Variable Definition
Dependent variable	Level of New Quality Productivity	NQP	Calculating the New Quality Productivity Indicator System Using the Entropy Method
Mediating variable	National Audit	Audit	National Audit Evaluation Indicator System
	Common Prosperity	CP	Indicator System for Common Prosperity
	Level of informatization	Info	Total postal and telecommunications business volume/Regional gross domestic product
	Industrial Structure	Indu	Tertiary industry output value / Secondary industry output value
Control variables	Level of social consumption	Consum	Total retail sales of consumer goods / Gross domestic product
	Environmental Regulatory Intensity	Envir	The ratio of regional industrial pollution control investment to regional GDP
	Labor force level	LR	The number of employed persons is taken as the natural logarithm
	Year Fixed Effect	Year	Virtual variable

3.3 Model Design

Models (1) and (2), developed by drawing upon relevant literature, have respectively validated Hypothesis 1 and Hypothesis 2:

$$NQP_{i,t} = \beta_0 + \beta_1 Audit_{i,t} + \beta_n Contrals_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$CP_{i,t} = \beta_0 + \beta_1 Audit_{i,t} + \beta_n Contrals_{i,t} + \varepsilon_{i,t} \quad (2)$$

To verify hypothesis (3)Drawing on the research of Wen Zhonglin and Ye Baojuan [30],establishing the Mediating Effect Model (3):

$$NQP_{i,t} = \beta_0 + \beta_1 Audit_{i,t} + \beta_2 CP_{i,t} + \beta_n Contrals_{i,t} + \varepsilon_{i,t} \quad (3)$$

Model (1) to examine the impact of national auditing on the level of new-type productive forces, if coefficient β_1 is significantly positive, it indicates that national auditing

can significantly enhance the level of new-type productive forces through its functions of revealing, preventing, and countering risks, thereby playing a positive role.

Model (2) assessing the impact of national auditing on the process of common prosperity, if coefficient β_1 is significantly positive, it indicates that the more fully the relevant functions of national auditing are exercised, the more effectively it promotes policy implementation, optimizes resource allocation, mitigates risks, and advances social equity, thereby effectively advancing the process of common prosperity.

Model (3) simultaneously examining the impact of national audit and common prosperity on new-quality productive forces, if coefficients β_1 and β_2 are both significantly positive, it indicates that the more fully the national audit function is exercised and the higher the level of common prosperity, the greater the propulsion of regional new-quality productive forces. This indicates that national audit can positively influence the level of new-quality productive forces indirectly by promoting common prosperity, meaning common prosperity exhibits a partial mediating effect. In this model, national audit (Audit) serves as the core explanatory variable, the level of new-quality productive forces (NQP) is the dependent variable, common prosperity (CP) acts as the mediating variable, Controls represent control variables, i and t denote provinces and years respectively, and ϵ is the error term.

Table 2 Descriptive Statistics Results

Variable	Samplesize	mean	Standarddeviation	minimumvalue	median	maximumvalue
NQP	360	0.2862	0.130	0.12	0.26	0.70
Audit	360	3.6526	0.512	2.56	3.67	4.82
CP	360	0.7041	0.093	0.61	0.67	1.00
Indu	360	1.2099	0.667	0.55	1.06	4.35
Consum	360	0.3775	0.067	0.23	0.38	0.53
Envir	360	0.0029	0.002	0.00	0.00	0.01
Info	360	0.0614	0.052	0.02	0.04	0.24
LR	360	7.5892	0.782	5.65	7.65	8.85

4.2 Correlation Analysis

The results of the correlation analysis are shown in Table 3. National auditing and the level of new-quality productive forces exhibit a significant positive correlation at the 1% level, indicating that the more fully national auditing functions are exercised, the higher the level of new-quality productive forces. This provides preliminary validation for Hypothesis 1. National auditing is significantly positively correlated with the common

IV. EMPIRICAL RESEARCH AND RESULTS

4.1 Descriptive Statistics

The descriptive statistics are presented in Table 2. The standard deviation of the new-type productive forces level is 0.13, with a minimum value of 0.12 and a maximum value of 0.7. This indicates that there are certain disparities in the levels of new-type productive forces across provinces, highlighting the significant importance of studying the influencing factors of new-type productive forces in this research. The standard deviation for common prosperity is 0.093, with a minimum value of 0.61 and a maximum value of 1.00. This indicates significant disparities in common prosperity levels across provinces. The standard deviation for the core explanatory variable, national auditing, is 0.512, ranging from a minimum of 0.15 to a maximum of 0.77. This indicates substantial variations in the intensity of oversight by provincial audit authorities. These differences primarily stem from factors such as provincial economic development levels, policy support, government governance capabilities, auditing systems and professional competencies, social environments and public participation, historical and cultural contexts, regional development imbalances, and the advancement of auditing informatization.

prosperity process at the 1% level, indicating that national auditing can advance the common prosperity process through its three major functions. Common prosperity is significantly positively correlated with the level of new-type productive forces at the 1% level, suggesting that the more the common prosperity process advances, the higher the level of new-type productive forces. This preliminarily validates Hypothesis 2.

Table 3 Correlation Analysis Results

NQP	Audit	GTFYZCF	indu	consum	envir	info	LR
NQP	1						
Audit	0.452***	1					
CP	0.643***	0.483***	1				
Indu	0.175***	0.515***	0.546***	1			
Consum	0.297***	0.361***	0.169***	0.234***	1		
Envir	-0.346***	-0.277***	-0.211***	-0.149***	-0.291***	1	
Info	-0.0870	0.184***	-0.150***	0.220***	0.0780	-0.135**	1
LR	0.521***	0.114**	-0.0180	-0.251***	0.434***	-0.360***	-0.089*

1 Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. The values in parentheses represent t-statistics. The same applies below.

To examine whether multicollinearity exists among the variables, the variance inflation factor (VIF) was calculated for the above variables. The VIF range was [1.26, 2.14], with a meanVIF of 1.64. All values were well below 10, indicating no severe multicollinearity among the variables. Therefore, subsequent analysis can proceed.

4.3 Regression Analysis

4.3.1 National Audit and the Return of New Quality Productivity

The regression results for national audit and new-type productive forces are shown in Table 4. Column (1) indicates that, without controlling for other variables, the regression coefficient between national audit and the level of new-type productive forces is 0.0238, showing a significant positive correlation at the 1% level. Column (2) incorporates additional control variables. The regression coefficient for national audit and new-type productive forces stands at 0.0212, maintaining a significant positive

correlation at the 1% level. These findings confirm that national audit significantly enhances new-type productive forces, thereby validating Hypothesis H1.

4.3.2 National Auditing and the Return to Common Prosperity

The regression results for national audit and common prosperity are shown in Table 5. Column (1) indicates that, without controlling for other variables, the regression coefficient between national audit and common prosperity is 0.0028, showing a significant positive correlation at the 10% level. Column (2) incorporates additional control variables, yielding a regression coefficient of 0.0031 for the relationship between national auditing and common prosperity. This indicates a statistically significant positive correlation at the 5% level, confirming that national auditing can advance the process of common prosperity and validating Hypothesis H2.

Table 4 Regression Analysis of National Auditing and New Quality Productivity

NPQ		
Audit	0.0238*** (3.3575)	0.0212*** (3.0459)
Indu		-0.0309*** (-3.1953)
Consum		0.0989** (2.4077)

Envir		-1.1779
		(-1.1899)
Info		-0.0203
		(-0.2377)
LR		-0.0125
		(-0.4929)
_cons	0.2184***	0.3181*
	(9.7969)	(1.6586)
Year fe	YES	YES
N	360	360
adj. R2	0.293	0.331

Table 5 Regression Analysis of National Auditing and Common Prosperity

CP		
Audit	0.0028*	0.0031**
	(1.8355)	(2.2792)
Indu		-0.0023
		(-1.2558)
Consum		0.0313***
		(3.9722)
Envir		0.1679
		(0.8834)
Info		-0.0666***
		(-4.0654)
LR		0.0352***
		(7.2295)
_cons	0.6920***	0.4209***
	(146.3359)	(11.4297)
Year fe	YES	YES
N	360	360
adj. R2	0.639	0.720

4.3.3 National Auditing, Common Prosperity, and the Return of New Quality Productivity

The regression results for national audit, common prosperity, and new-type productive forces are shown in Table 6.

Column (1) indicates that the regression coefficient between common prosperity and new-type productive forces is 0.9351, showing a significant positive correlation at the 1% level. This suggests that common prosperity can promote the enhancement of new-type productive forces.

Column (2) shows that the regression coefficient for national audit and new-type productive forces is 0.0187, while that for common prosperity and new-type productive forces is 0.8351. Both exhibit significant positive

correlations at the 1% level, indicating that national audit can enhance new-type productive forces by advancing common prosperity, thereby validating Hypothesis 3.

Table 6 Mediating Effects

NQP		
GTFYZCF	0.9351*** (3.2079)	0.8351*** (2.8696)
indu	-0.0293*** (-3.0240)	-0.0290*** (-3.0207)
consum	0.0775* (1.8461)	0.0727* (1.7476)
envir	-1.3389 (-1.3531)	-1.3181 (-1.3452)
info	0.0678 (0.7841)	0.0353 (0.4084)
ld	-0.0464* (-1.7042)	-0.0418 (-1.5470)
A		0.0187*** (2.6890)
_cons	-0.0150 (-0.0657)	-0.0334 (-0.1480)
Year fe	YES	YES
N	360	360
adj. R2	0.333	0.346

4.4 Robustness Test

4.4.1 Lag Analysis

To address endogeneity issues and test whether the positive effect of national audits on enhancing new-type productive forces remains stable, we regressed the lagged national audit variable on the lagged new-type productive

forces variable. The results are shown in Table 7. Regardless of whether control variables were included, the regression coefficient for national audit remained significantly positive at the 1% level. This indicates that lagged national audit and lagged new-type productive forces still exhibit a significant positive correlation.

Table 7 Lag Test Results

	NQP	F.NQP	
L.Audit	0.1863*** (13.1620)	0.1494*** (11.2605)	
Audit		0.1863*** (13.1620)	0.1457*** (10.9136)
Indu		0.0337*** (3.7454)	0.0349*** (3.6960)

Consum		-0.2851***		-0.2259**
		(-3.2649)		(-2.4840)
Envir		-7.8302***		-6.9056***
		(-3.1907)		(-2.8784)
Info		0.2939		-0.0301
		(1.3582)		(-0.1408)
LR		0.0868***		0.0829***
		(10.9561)		(10.3848)
_cons	-0.2848***	-0.7490***	-0.2848***	-0.7188***
	(-5.9897)	(-11.1787)	(-5.9897)	(-10.0947)
Year fe	YES	YES	YES	YES
N	330	330	330	330
adj. R2	0.345	0.583	0.345	0.574

4.4.2 Panel Tobit Model

To further validate the robustness of the main regression results, the original regression model was replaced with a panel Tobit model. The regression results

are shown in Table 8. The regression coefficient for national audit remains consistent with the previous findings, exhibiting a significant positive correlation with the level of new-type productivity at the 1% significance level. The research conclusions remain unchanged.

Table 8 Panel Tobit Model Regression Results

NQP			
Audit	0.0265***	0.0210***	
	(3.8129)	(3.0791)	
CP		0.8667***	
		(6.7345)	
Indu		-0.0313***	
		(-3.5488)	
Consum		0.0560	
		(1.3943)	
Envir		-1.2464	
		(-1.2952)	
Info		0.0550	
		(0.6527)	
LR		0.0417***	
		(2.6247)	
_cons	0.2101***	-0.6886***	
	(6.7920)	(-4.5745)	
Year fe	YES	YES	
N	360	360	

4.4.3 SOBEL Test and BOOTSTRAP Test

To further validate the mediating effect of common prosperity on national auditing and new-quality productive forces, the Sobel test and Bootstrap test were introduced. The Sobel test results indicate that common prosperity exerts a significant mediating effect between national auditing and new-quality productive forces, accounting for approximately 56.6% of the total effect. The BOOTSTRAP test results indicate that the product of regression coefficients β_1 and β_2 falls outside the 95% confidence interval containing zero. Both tests further validate that common prosperity exerts a significant mediating effect on the relationship between national auditing and new-quality productivity.

4.5 Regional Heterogeneity Analysis

Given the variations in economic foundations and policy advantages across different regions, this study grouped the sample according to regional heterogeneity and conducted separate regressions for the eastern, central, and western regions. The regression results are presented in Table 9.

National auditing significantly enhances the level of new-quality productive forces in eastern regions (5%), while its impact on central and western regions is negligible. This is primarily because eastern regions possess robust economic foundations, well-developed market mechanisms, and a high concentration of factors such as capital, technology, and talent. Concurrently, eastern regions feature sophisticated auditing systems and highly skilled auditing personnel capable of leveraging advanced

technologies and methodologies (e.g., smart auditing, research-based auditing) to improve auditing efficiency and quality. Moreover, the eastern regions exhibit strong government governance capabilities and advanced audit informatization, enabling efficient problem identification and resolution. Policy support and resource allocation further facilitate the full exercise of national audit oversight functions in these areas. In contrast, the central and western regions face lower levels of economic development, imperfect market mechanisms, and a lack of policy support and resource allocation, which constrain the promotional role of national audits.

In western regions, common prosperity has played a more pronounced role in elevating the level of new-quality productive forces (1%). This is primarily attributable to national policy support, such as the "Guiding Opinions on Promoting the Development of Western Regions in the New Era to Form a New Pattern." This policy provides preferential treatment to western regions in areas like finance, taxation, and land use, effectively safeguarding the realization of common prosperity. Building on this foundation, the western regions have achieved notable progress in their pursuit of common prosperity. Continuous improvements in residents' living standards and infrastructure have laid a solid groundwork for the development of new-quality productive forces. Furthermore, through policy guidance, the western regions have accelerated their transition from traditional industries to high-tech and intelligent sectors, fostering multiple strategic emerging industrial clusters that further propel the advancement of new-quality productive forces.

Table 9 Results of Regional Heterogeneity Tests

NQP			
	Eastern	Central Region	Western Region
Audit	0.0221** (2.0026)	-0.0081 (-0.4192)	0.0035 (0.4698)
CP	0.5734 (1.3775)	0.6975 (1.0694)	1.4702*** (3.9468)
Indu	-0.0605*** (-3.2428)	-0.0901*** (-2.7793)	0.0081 (0.8792)
Consum	0.0488 (0.7566)	-0.0031 (-0.0284)	0.1110** (2.2702)
Envir	-1.6271 (-0.8079)	-0.8035 (-0.2427)	0.3723 (0.4419)
Info	0.0515	0.1950	0.0239

	(0.3327)	(0.6714)	(0.3017)
LR	-0.0756*	0.0454	0.0462
	(-1.8541)	(0.6451)	(1.4245)
_cons	0.5000	-0.4042	-1.1551***
	(1.3791)	(-0.6727)	(-4.8103)
Year fe	YES	YES	YES
N	192	108	168
adj. R2	0.335	0.167	0.522

V. CONCLUSIONS AND RECOMMENDATIONS

This study empirically examines the driving effect and operational mechanisms of national auditing on new-type productive forces using panel data from 30 provinces (municipalities and autonomous regions) in China from 2010 to 2021. The findings reveal: (1) National audits significantly propel the development of new-type productive forces, with greater audit intensity leading to more pronounced improvements in regional innovation capabilities; (2) Common prosperity serves as a bridging mechanism, as audits indirectly drive productivity upgrades by promoting equitable resource allocation; (3) Significant regional differences exist, with eastern regions benefiting more prominently, while central and western regions need to leverage local characteristics to maximize gains.

Based on the research findings, this paper proposes the following three recommendations:

First, focus on innovation-driven audit oversight. Refine the specialized audit mechanism for scientific and technological innovation, with a focus on overseeing the efficiency of major science and technology project funding, the intensity of R&D investment, and the rate of achievement conversion. Strengthen audit evaluations of industry-academia-research collaborative innovation and intellectual property protection. Establish a comprehensive audit framework covering the entire process from "basic research to technological breakthroughs to industrial application." Conduct phased tracking of the scientific validity of R&D project initiation, the compliance of mid-term fund usage, and the market benefits of achievement conversion. This will promote the deep integration of the innovation chain and industrial chain, accelerating the transformation of scientific and technological achievements into new productive forces.

Second, enhance the intelligent auditing system. Establish an evaluation index system for new quality productive forces development, incorporating core metrics

such as R&D investment ratio, technology transaction activity, and value-added output from high-tech industries. Employ big data analytics to build a dynamic monitoring model linking "policy implementation—factor mobility—innovation output," enabling real-time identification of policy execution deviations and bottlenecks in factor allocation. Strengthen training for multidisciplinary audit professionals and advance blockchain technology applications in scenarios like research funding traceability and automated smart contract auditing to enhance risk warning accuracy and audit evidence reliability.

Third, implement regionally differentiated strategies. Eastern regions should strengthen audit innovation in the digital economy, exploring "penetrating" regulatory models for emerging industries like artificial intelligence and biopharmaceuticals, covering the entire lifecycle from R&D to market access and commercialization. Central and western regions should leverage the policy dividends from the "New Era Western Development Strategy" to prioritize audits on the intelligent transformation of traditional industries and the cultivation of strategic emerging industries. This will establish a coordinated mechanism linking "audit oversight, policy alignment, and industrial upgrading" to foster distinctive regional industrial clusters.

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