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# Fiscal decentralization and corruption: The moderating role of economic responsibility audit in China

Chen Ji Fang[1*], Aidi Ahmi[2], Zakiyah Sharif[3]

[1,3]*Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia, Malaysia.*
[2]*Accounting Information System Research and Development Institute (AISRED), Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia, Malaysia.*

Corresponding author: Chen Ji Fang (*Email: chenjifang54321@163.com*)

## Abstract

This study aims to assess the effectiveness of the Economic Responsibility Audit (ERA) system in mitigating corruption associated with fiscal decentralization in China. Using data from 30 provinces in China between 2010 and 2021, this study examines the impact of income and expenditure decentralization on corruption levels. The study employs statistical models to explore the relationships between fiscal decentralization and corruption, as well as the moderating effect of the ERA system. The analysis reveals that both income decentralization and expenditure decentralization are positively and significantly correlated with increased corruption levels. Notably, expenditure decentralization has a stronger and more pronounced effect on corruption compared to income decentralization. Additionally, the ERA system does not moderate or reduce the positive relationship between fiscal decentralization and corruption. The findings suggest that the ERA system is limited in its capacity to curb corruption in the context of fiscal decentralization. Despite the audit system's implementation, it does not appear to effectively address the link between decentralization and corruption, particularly regarding expenditure decentralization. These results provide critical insights for policymakers and governance officials, indicating the need for stronger and more targeted anti-corruption strategies. The study suggests reconsidering the effectiveness of the ERA and exploring complementary mechanisms to reduce corruption in the decentralized fiscal system.

**Keywords:** Corruption Governance, Economic Responsibility Audit, Expenditure Decentralization, Fiscal Decentralization, Income Decentralization.

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## 1. Introduction

China's fiscal policy system has undergone profound transformations alongside the evolution of its economic system. From 1949 to 1978, the country operated under a highly centralized fiscal management framework. This was subsequently replaced by various forms of budgetary contracting between 1979 and 1993, culminating in the introduction of the tax-sharing system in 1994 [1]. The tax-sharing system delineated revenue and expenditure responsibilities between the central and local governments, aiming to curtail local discretion over revenue distribution [2]. Over time, China's fiscal decentralization has shifted from centralization to high decentralization, eventually settling into a model of central macroeconomic regulation.

While centralized fiscal systems may lead to excessive control by the central government, fiscal decentralization is often argued to mitigate the monopolistic tendencies of central authority, thereby fostering local economic development, greater accountability, and improved outcomes for citizens [3-5]. However, decentralization also carries risks. By granting significant autonomy to local governments, it can create opportunities for corruption in the absence of sufficient constraints [6, 7]. China's experience exemplifies this duality: while fiscal decentralization has facilitated economic development, it has also been accompanied by a notable rise in corruption [8]. Data from Transparency International indicate that China's international corruption index has fluctuated between 30 and 50 points over the past decade, underscoring its persistent and significant corruption challenges.

This study focuses not solely on corruption itself but on its prevention and control. Although corruption contexts and control strategies differ across countries, mechanisms for monitoring and ensuring accountability of power are universally employed. As Klitgaard [9] observed, corruption arises when monopoly power and official discretion intersect with a lack of accountability. In China, anti-corruption measures include both legal sanctions, such as prosecution and punishment, and administrative strategies, including monitoring and accountability systems [10].

Government auditing serves as a critical administrative mechanism for ensuring the lawful use of public funds in China [11]. Within this context, the Economic Responsibility Audit (ERA)—a financial accountability audit targeting government officials—is a key instrument for overseeing power and preventing misconduct [12]. Unique to China, the ERA primarily audits government officials at all levels [13] and managers of state-owned enterprises [14].

The ERA aims to comprehensively assess the economic responsibilities of government officials, with a particular focus on identifying irregularities and corruption [15]. Additionally, it evaluates the operational performance of managers in state-owned enterprises [16]. According to the latest ERA legislation, local officials who have held office for over a year must undergo anti-corruption audits. Similarly, officials leaving office—whether due to transfers, retirement, or resignation—are also subject to such audits [15].

While numerous studies have examined the relationship between the ERA and corruption, few have explored its moderating effect on the link between fiscal decentralization and corruption control. This study aims to address this gap, offering a novel contribution to the growing body of literature on the ERA, fiscal decentralization, and corruption governance.

The structure of this paper is as follows: First, it provides an overview of the current state of fiscal decentralization, corruption, and the ERA in China. Next, the literature review explores the relationship between fiscal decentralization and corruption control, with a focus on the ERA's potential moderating effects. The research design and methods section details the data sources, instruments, and analytical models employed. Empirical findings are presented in the results section, followed by a discussion and conclusion that situate these findings within the broader literature, offer recommendations for improvement, and acknowledge the study's limitations. Based on the content of the introduction, here are three research questions for the study:

(1) How does fiscal decentralization influence the level of corruption in China, and what role does the Economic Responsibility Audit (ERA) play in moderating this relationship?

(2) To what extent do anti-corruption measures, such as government auditing and accountability systems, mitigate the risks of corruption in the context of fiscal decentralization in China?

(3) What impact does the Economic Responsibility Audit (ERA) have on the effectiveness of corruption control mechanisms, particularly in the context of local government officials and state-owned enterprise managers in China?

## 2. Literature Review and Hypotheses

### *2.1. Fiscal Decentralization and Corruption*

Globally, fiscal decentralization policies and their implementation exhibit significant variations across countries, leading to diverse and often inconsistent impacts on corruption. A substantial body of research suggests that fiscal decentralization can positively influence corruption control by promoting transparency, reducing monopolistic tendencies, and fostering competition among local governments [17-22]. Conversely, other studies argue that fiscal decentralization may inadvertently exacerbate corruption by providing local officials with increased autonomy and discretion, which, in the absence of adequate oversight, can create opportunities for rent-seeking behavior [15, 19, 23, 24].

In the context of China, the relationship between fiscal decentralization and official corruption remains a contentious issue. On one hand, fiscal decentralization is posited to promote intergovernmental competition for resources, which can inhibit corrupt practices [25, 26]. On the other hand, it is argued that the significant budgetary control afforded to local governments can make officials more susceptible to corruption, particularly in the absence of sufficient regulatory mechanisms [8, 27, 28].

This study aligns with the latter perspective, positing that fiscal decentralization, without effective oversight, is likely to increase corruption. Despite the central government's macroeconomic regulation of the tax system, local governments in

China have historically exercised substantial fiscal discretion, often exceeding their formal mandates. Since the implementation of fiscal decentralization, various forms of misconduct have been documented, including unauthorized taxation [29] and the misuse of fiscal budgetary powers [30]. Between 2000 and 2023, the share of national expenditure controlled by local governments rose from 65.25% to 86.08%, highlighting the significant fiscal autonomy of local governments.

To account for the variations in fiscal decentralization policies, this study distinguishes between income decentralization and expenditure decentralization, following the frameworks established by Ding, et al. [2] and Jia, et al. [31].

Based on the above analysis, the following hypotheses are proposed:

*Hypothesis $_{1:}$ Fiscal decentralization in China will lead to an increase in corruption.*

*Hypothesis $_{1a:}$ Income decentralization in China will lead to an increase in corruption.*

*Hypothesis $_{1b:}$ Expenditure decentralization in China will lead to an increase in corruption.*

### *2.2. The Effect of ERA in Moderating the Relationship Between Fiscal Decentralization and Corruption*

The Economic Responsibility Audit (ERA) is a distinctive form of government auditing in China and serves as an institutional mechanism for monitoring the powers of officials [12]. Since its implementation, numerous studies have demonstrated the ERA's effectiveness in combating corruption [32-36]. However, few studies have empirically examined its moderating effect on the relationship between fiscal decentralization and corruption.

This study posits that the ERA has the potential to mitigate the corruption risks associated with fiscal decentralization.

First, corruption is fundamentally an abuse of economic power [28] with its primary motivation rooted in economic interests [37, 38]. Fiscal decentralization, as a form of economic power, inherently creates opportunities for corruption. The ERA, particularly under its most recent legal framework, aims to strengthen supervision, impose restrictions on power abuse, and actively punish and prevent corruption [39].

Second, the uniqueness of the ERA lies in its focus on individuals rather than units. Its primary audit subjects include government officials at all levels and managers of state-owned enterprises [14]. The ERA's primary mandate is to ensure that officials fulfill their responsibilities lawfully and remain free from corrupt practices [15, 40]. Importantly, under the 2019 legal provisions, officials at the deputy level and above are required to undergo ERA reviews upon assuming, leaving, or retiring from office. These provisions aim to address corruption risks arising from fiscal decentralization at their source [28].

Finally, as a type of government audit [13] the ERA shares the general functions of government auditing, such as ensuring the legal use of public funds and protecting state property [11]. Fiscal decentralization, which involves income and expenditure decentralization, constitutes the core of government financial activities [1]. By auditing the financial responsibilities of officials involved in these activities, the ERA identifies and exposes irregularities [32] imposes penalties, and holds officials accountable [41]. These measures collectively contribute to moderating the relationship between fiscal decentralization and corruption.

Based on the above analysis, the following hypotheses are proposed:

*Hypothesis $_{2:}$ The ERA moderates the relationship between fiscal decentralization and corruption in China.*

*Hypothesis $_{2a:}$ The ERA moderates the relationship between income decentralization and corruption in China.*

*Hypothesis $_{2b:}$ The ERA moderates the relationship between expenditure decentralization and corruption in China.*

## 3. Research Design and Results

### *3.1. Research Variables, Samples, and Data Sources*

#### *3.1.1. Dependent variable:*

This study uses the degree of corruption (Corr) as the dependent variable. The most common way to measure this variable internationally is the corruption standard index of international organizations, including the World Bank's BI index [42, 43] and Transparency International's CPI index [44, 45]. However, China usually discloses corruption by publishing the number of cases and corrupt officials. Therefore, this study refers to previous studies [46-50] and uses the ratio of the number of corrupt officials in each province to the total population of the province per 100,000 to measure this variable. The higher the index, the greater the ratio of corrupt officials and the higher the degree of corruption.

#### *3.1.2. Independent Variables*

Reference to previous studies Shen, et al. [1]; Ko and Zhi [8]; Changwony and Paterson [51] and Duan [52] combined with the actual situation of China's fiscal decentralization. This study uses the ratio of each province's average fiscal revenue and the country's average fiscal revenue (ID) to measure income decentralization [53, 54]. Similarly, the ratio of each province's average fiscal expenditure and the country's average fiscal expenditure (ED) is used to measure expenditure decentralization [2, 31, 55]. The larger the two ratios, the greater the fiscal decentralization.

#### *3.1.3. Moderating Variables*

There have been many studies on ERA before, but most of them use the policy of whether ERA is implemented in that year to measure this variable [56-59]. This study chooses a more detailed measurement method for this type of audit, which is the number of audited officials(AO) [31, 35] because the unique feature of this type of audit is that the audit object is individual officials rather than units. Moreover, because the main task of this type of audit is to monitor the performance of

officials' economic responsibilities and reveal illegal amounts, the logarithm of the amount in question directly responsible (lnADR) [28, 32] is selected to measure another variable.

*3.1.4. Control Variables*

This study incorporates several control variables to ensure a comprehensive analysis. Openness (OPEN) is measured by the ratio of a province's total trade to its GDP, indicating the degree of openness in each province.

The education level (EL) is captured through the ratio of higher education graduates, representing the overall educational attainment in the province. Marketization (MK) is assessed using the provincial marketization index, which reflects the extent of market-oriented reforms. The salary level (SL) is measured by comparing the average wage of state-owned units to the overall average wage in each province, offering insights into the income gap. Lastly, economic growth (EG) is represented by the per capita GDP of each province. These control variables provide a more comprehensive understanding of the relationship between Economic responsibility audit (ERA), fiscal decentralization, and corruption.

Since 2010, China has officially implemented the ERA law, which has further formalized and regulated ERA's oversight functions.

Given the availability and reliability of corruption data, this study focuses on a sample of 30 Chinese provinces (excluding Hong Kong, Macao, Taiwan, and Tibet) from 2010 to 2021, resulting in 360 observations. The dependent variable, corruption, is sourced from each province's annual procuratorial work reports. Data for the two independent variables, income decentralization and fiscal decentralization, are drawn from the China Statistical Yearbook, while information on the two moderating variables, ERA, comes from the China Audit Yearbook. The five control variables are obtained from the statistical yearbooks of the 30 provinces.

*3.2. Research Model*

This study used Python 3.9.1 software for data regression analysis. The following model was designed based on hypothesis 1 (1a,1b):

$$Corri, t = \beta 0 + \beta 1IDi,t + \beta 2OPi,t + \beta 3ELi,t + \beta 4MKi,t + \beta 5SLi,t + \beta 6EGi,t + \lambda t + \varepsilon i,t$$

$$Corri, t = \beta 0 + \beta 1EDi,t + \beta 2OPi,t + \beta 3ELi,t + \beta 4MKi,t + \beta 5SLi,t + \beta 6EGi,t + \lambda t + \varepsilon i,t$$

The data includes provinces (i) and periods (t). Regional and time-specific effects are controlled using dummy variables (βi and λt), while the error term is represented by ε. According to the proposed hypothesis, the coefficients of both decentralizations (ID and ED) are expected to be positive, which indicates that fiscal decentralization leads to more corrupt personnel.

Based on hypothesis 2 (2a,2b) this study designed the following model:

$$Corri,t=\beta 0+\beta 1IDi,t+\beta 2AOi,t+\beta 3IDi,t*AOi,t+\beta 4OPi,t+\beta 5ELi,t+\beta 6MKi,t+\beta 7SLi,t+\beta 8EGi,t+\lambda t+\varepsilon i,t$$

$$Corri,t=\beta 0+\beta 1IDi,t+\beta 2lnADRi,t+\beta 3IDi,t*lnADRi,t+\beta 4OPi,t+\beta 5ELi,t+\beta 6MKi,t+\beta 7SLi,t+\beta 8EGi,t+\lambda t+\varepsilon i,t$$

$$Corri,t=\beta 0+\beta 1EDi,t+\beta 2AOi,t+\beta 3EDi,t*AOi,t+\beta 4OPi,t+\beta 5ELi,t+\beta 6MKi,t+\beta 7SLi,t+\beta 8EGi,t+\lambda t+\varepsilon i,t$$

$$Corri,t=\beta 0+\beta 1EDi,t+\beta 2lnADRi,t+\beta 3EDi,t*lnADRi,t+\beta 4OPi,t+\beta 5ELi,t+\beta 6MKi,t+\beta 7SLi,t+\beta 8EGi,t+\lambda t+\varepsilon i,t$$

Model 2 introduces the interaction term of ERA to study whether it moderates the relationship between fiscal decentralization and corruption. Hypothesis 2 (2a, 2b) predicts that the interaction term between the two decentralizations (ID and ED) and ERA is negative. This indicates that ERA suppresses the amount of corruption caused by the two decentralizations.

*3.3. Descriptive Statistics and Pearson's Coefficient Analysis*

Table 1 reveals notable disparities in corruption across Chinese provinces. On average, there are 3.03 corrupt individuals per 100,000 people, with a standard deviation of 1.62, a minimum of 0.08, and a maximum of 9.21. These figures highlight significant regional variations in corruption levels, with differing degrees of dispersion in the data.

For ID and ED, the minimum values are 0.2189 and 0.487808, while the maximum values are 2.264573 and 2.191404, respectively. Their standard deviations are 0.464183 and 0.406714, indicating notable differences in the levels of income and expenditure decentralization among provinces. In some cases, provincial per capita income and expenditures have surpassed the national average.

In terms of AO, the minimum value is 114, the maximum is 6,826, and the average is 1,206, suggesting substantial variation across provinces in the number of officials audited by ERA. Most provinces have relatively few individuals subjected to audits. The minimum logged amount in question with direct responsibility (lnADR) is 0, the maximum is 16.96, and the average is 10.36, indicating significant differences in the amounts uncovered by ERA audits, with many provinces showing higher amounts in question.

Control variables such as OP and EL show the most minor changes and are relatively concentrated. However, MK, SL, and EG, which represent the level of marketization, salary level, and economic growth, show significant differences among provinces, consistent with China's actual situation.

**Table 1.**
Descriptive statistical analysis.

| Variables | Measure | Symbol | Count | Min. | Max. | Mean | Std. |
|---|---|---|---|---|---|---|---|
| Corruption | Ratio of the number of corrupt officials per 100,000 population in each province | Corr | 359 | 0.082027 | 9.209316 | 3.030556 | 1.621801 |
| Income decentralization | The ratio of per capita fiscal income of each province to national per capita fiscal income | ID | 360 | 0.218980 | 2.264573 | 0.613279 | 0.464183 |
| Expenditure Decentralization | The ratio of per capita fiscal expenditure of each province to national per capita fiscal expenditure | ED | 360 | 0.487808 | 2.191404 | 1.002094 | 0.406714 |
| Audited officials | Number of officials audited by ERA in each province | AO | 300 | 114.0000 | 6826.0000 | 1205.59333 | 849.558588 |
| The amount in question that is directly responsible | The logarithm of the amount in question that each province was directly responsible for audited by ERA | lnADR | 300 | 0.000000 | 16.955315 | 10.360197 | 2.570403 |
| Openness | The ratio of total imports and exports to the GDP of each province | OPEN | 360 | 0.007627 | 1.463781 | 0.277329 | 0.294548 |
| Education level | The ratio of higher education graduates to the total population of each province in each year | EL | 359 | 0.002021 | 0.010415 | 0.005149 | 0.001398 |
| Marketization level | Marketability Assessment Index | MK | 300 | 3.360000 | 11.490000 | 7.780567 | 1.893019 |
| Salary level | The ratio of the average wage of state-owned enterprises to the average wage of the province | SL | 359 | 0.931497 | 3.224672 | 1.187779 | 0.307402 |
| Economic growth | The amount of GDP per capita in each province | EG | 360 | 1.288200 | 18.398000 | 5.421178 | 2.884396 |

Table 2 shows an unexpected negative correlation between the two fiscal decentralizations (ID and ED) and the degree of corruption (Corr), which contradicts the initial expectation and requires further regression analysis. In contrast, the two ERA variables, audited officials (AO) and the amount in question directly responsible (lnADR), are positively correlated with corruption, which means that the more officials audited by ERA and the more amount in question revealed, the more corrupt officials are found. In addition, corruption is significantly negatively correlated with the five control variables, especially openness (OP), marketization level (MK), salary level (SL), and economic growth (EG), which shows that they all play a specific role in corruption control.

However, several variables' coefficients are close to or even more significant than 0.7. For example, SD and ID, OP and ID, SL and ID, EG and ID, OP and EG. This also shows the presence of multicollinearity between the variables. Therefore, this study conducted a VIF test, and the results showed that except for the high values of variables ID and EG, the values of the other variables were less than 5, but all variables did not exceed 10. To overcome the multicollinearity problem, this study regressed the dependent and two independent variables separately and regressed the interaction effect of the two moderating variables separately.

**Table 2.**
Pearson correlation analysis.

| Variables | Corr | ID | ED | AO | lnADR | OPEN | EL | MK | SL | EG | VIF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Corr | 1 | | | | | | | | | | 1.91 |
| ID | -0.3 | 1 | | | | | | | | | 9.46 |
| ED | -0.04 | 0.69 | 1 | | | | | | | | 2.59 |
| AO | 0.07 | -0.3 | -0.49 | 1 | | | | | | | 1.83 |
| lnADR | 0.03 | -0.36 | -0.54 | 0.41 | 1 | | | | | | 2.53 |
| OPEN | -0.33 | 0.84 | 0.46 | -0.14 | -0.25 | 1 | | | | | 4.39 |
| EL | -0.11 | 0.4 | 0.19 | 0.03 | -0.08 | 0.32 | 1 | | | | 1.51 |
| MK | -0.23 | 0.33 | -0.19 | 0.2 | 0.17 | 0.47 | 0.53 | 1 | | | 1.67 |
| SL | -0.34 | 0.58 | 0.36 | -0.15 | -0.4 | 0.55 | 0.08 | 0.15 | 1 | | 1.64 |
| EG | -0.49 | 0.84 | 0.49 | -0.17 | -0.17 | 0.73 | 0.44 | 0.5 | 0.55 | 1 | 6.92 |

*3.4. Regression Results*

This study applied the Durbin-Watson (DW) test to address autocorrelation and enhance the accuracy of the multiple regression results. Initially, before the introduction of lagged variables, the DW statistic was 0.625, indicating strong positive autocorrelation, which suggests a dependency between residual terms in the regression model. This autocorrelation could lead to biased estimates of coefficient significance. To address this issue, the study introduced lagged variables (delayed by one year), and the DW statistic improved to 1.929, which is closer to the ideal value of 2, indicating a significant reduction in autocorrelation and improved model accuracy.

Table 3 presents further analysis. The F-test P values in the second column are all 0, showing statistical significance and confirming that neither model is appropriate for the mixed effects approach. Subsequently, the Hausman test was conducted, and the P value was found to be close to 1, supporting the use of a random effects model for both cases. The regression results in the fourth and fifth columns of Table 3 illustrate the relationship between the two types of decentralization (income and expenditure) and corruption levels. Both coefficients for income decentralization (ID) and expenditure decentralization (SD) are positive and statistically significant, indicating that fiscal decentralization causes higher corruption levels. These results support Hypotheses 1a and 1b.

**Table 3.**
Empirical findings for Model 1(1a,1b).

| Variables | F test | Hausman test | Income decentralization | Spending decentralization |
|---|---|---|---|---|
| ID | Statistics: 16.6037<br>P-value: 0.0000 | Statistics: 2.085570<br>P-value: 0.911663 | 0.7944 ** | |
| SD | Statistics: 22.8342<br>P-value: 0.0000 | Statistics: -408.786605<br>P-value: 1.000000 | | 1.5015*** |
| OPEN | | | -3.1751 *** | -2.7537 *** |
| EL | | | 273.46 *** | 161.75 *** |
| MK | | | 0.2127 *** | 0.2608 *** |
| SL | | | 0.8581 *** | 0.2137 |
| EG | | | -0.1380 *** | -0.1402 *** |
| N | | | 360 | 360 |
| F-statistic | | | 72.197 | 78.090 |
| R | | | 0.9107 | 0.9245 |

**Note:** p < 0.01: ", p < 0.05: ", p < 0.1: ". ***, **, and * indicate that the regression coefficient is statistically significant at the 1%, 5%, and 10% levels, respectively.

Table 4 shows that the P values of the F test in the second column are all 0 and very significant, which indicates that the mixed effect model is not applicable. Next, this study conducted another Hausman test. Since the P values of the two decentralization models are 1, the random effect model is selected for both models. The results in the Fourth column of Table 4 show that the corruption relationship has a weak positive significant relationship with income decentralization (ID) but has a strong positive relationship with expenditure decentralization (SD), again showing that fiscal decentralization leads to corruption. However, the number of officials audited by ERA (AO) has a significant negative relationship with expenditure decentralization (SD), which indicates that ERA controls corruption only in the expenditure decentralization model.

**Table 4.**
Moderating effects of model 2 (AO).

| Variables | F test | Hausman test | Income decentralization | Spending decentralization |
|---|---|---|---|---|
| ID | Statistics: 9.9223<br>P-value: 0.0000 | Statistics: -216.211726<br>P-value: 1.000000 | 0.7625 * | |
| SD | Statistics: 18.3469<br>P-value: 0.0000 | Statistics: -458.521400<br>P-value: 1.000000 | | 1.0868*** |
| AO | | | 4.542e-05 | -0.0009*** |
| ID*AO | | | -0.0002 | |
| SD*AO | | | | 0.0014*** |
| OPEN | | | -3.1907*** | -2.5963*** |
| EL | | | 259.05*** | 138.57*** |
| MK | | | 0.2125*** | 0.2636*** |
| SL | | | 0.7860*** | 0.2546 |
| EG | | | -0.1100** | -0.1418*** |
| N | | | 360 | 360 |
| F-statistic | | | 43.724 | 51.188 |
| R | | | 0.9012 | 0.9184 |

**Note:** p < 0.01: '***', p < 0.05: '**', p < 0.1: '*'.***, **and * indicate that the regression coefficient is significant at the levels of 1%, 5%, and 10% respectively.

In addition, the coefficient of the interaction term between AO and Income decentralization is insignificant, although the direction is negative and consistent with expectations. Expenditure decentralization is significant but not in the same direction as expected. Therefore, the hypothesis that ERA can moderate the relationship between fiscal decentralization and corruption does not hold. Among the control variables, the results of the two decentralization models are almost the same. Openness (OPEN) and the level of economic development (EG) are both highly negatively significant, suggesting that they have an excellent effect on corruption control. On the contrary, the level of education (EL) and the level of marketization (MK) are both highly positively significant, indicating that they do not affect corruption control.

Table 5 shows that the P-values from the F-test in the second column are all 0, indicating statistical significance and confirming that the mixed-effects model is unsuitable for this analysis. A subsequent Hausman test was conducted, where the P-values for the income decentralization model were all 0, leading to the selection of the fixed-effects model. In contrast, the expenditure decentralization model had a P-value of 1, prompting the choice of the random-effects model for this case.

The results in the fourth column of Table 5 demonstrate a strong, positive, and significant relationship between both income decentralization (ID) and expenditure decentralization (SD) and corruption, further supporting the conclusion that fiscal decentralization increases corruption levels.

Additionally, while the interaction terms between lnADR and income decentralization, as well as lnADR and expenditure decentralization, have negative coefficients consistent with theoretical expectations, they are either weakly significant or insignificant. As a result, the hypothesis that ERA moderates the relationship between fiscal decentralization and corruption is once again rejected.

Regarding the control variables, openness (OPEN) shows a strong negative effect in both decentralization models, suggesting a positive impact on corruption control. Economic growth (EG) is negatively significant only in the expenditure decentralization model, while salary level (SL) is highly negatively significant only in the income decentralization model.

**Table 5.**
Moderating effects of model 2 (lnADR).

| Variables | F test | Hausman test | Income decentralization | Spending decentralization |
|---|---|---|---|---|
| ID | Statistics: 10.4274<br>P-value: 0.0000 | Statistics: 74.910340<br>P-value: 0.000000 | 0.8580** | |
| SD | Statistics: 13.0238<br>P-value: 0.0000 | Statistics: -266.944189<br>P-value: 1.000000 | | 1.6886*** |
| lnADR | | | -0.0082 | 0.0681* |
| ID*lnADR | | | -0.0561* | |
| SD*lnADR | | | | -0.0210 |
| OPEN | | | -1.9639*** | -2.4663*** |
| EL | | | 109.28** | 125.17** |
| MK | | | 0.0257 | 0.2360** |
| SL | | | -0.6934*** | 0.0056 |
| EG | | | -0.0573 | -0.1475*** |
| N | | | 360 | 360 |
| F-statistic | | | 12.797 | 51.986 |
| R | | | -0.5038 | 0.9258 |

**Note:** p < 0.01: '***', p < 0.05: '**', p < 0.1: '*'. ***, **and * indicate that the regression coefficient is significant at the levels of 1%, 5%, and 10% respectively.

## 4. Discussion

The findings from Model 1 confirm Hypotheses 1b and 1c, establishing a positive relationship between fiscal decentralization (encompassing both income and expenditure decentralization) and corruption. These results are consistent with prior studies by Wu and Wang [28]; Luo, et al. [60] and Wu [61]. Consequently, this study adds further empirical support to the notion that fiscal decentralization creates conditions conducive to corruption. Importantly, it also demonstrates that the link between expenditure decentralization and corruption is stronger than that of income decentralization, suggesting that expenditure decentralization has a greater propensity to foster corruption.

In Model 2 (2a, 2b), the study reveals that the Economic Responsibility Audit (ERA) does not moderate the positive relationship between fiscal decentralization and corruption. Although ERA has traditionally been regarded as a key mechanism for monitoring the responsibilities and actions of Chinese officials, previous studies have confirmed its role in curbing corruption [32, 36]. However, this study concludes that ERA does not mitigate the corruption induced by fiscal decentralization. The data shows that the number of officials audited by the ERA and the amount in question do not correlate with the actual corruption levels or the severity of the corruption. These measures are insufficient to accurately capture the ERA's impact on controlling corruption at the provincial level, suggesting that the ERA's effectiveness in governance is limited [32].

## 5. Conclusions

This study examines fiscal decentralization data from 30 Chinese provinces between 2010 and 2021 to evaluate its impact on corruption. The findings reveal that both income decentralization and expenditure decentralization are positively and significantly associated with higher levels of corruption. Notably, expenditure decentralization demonstrates a stronger and more pronounced effect on corruption compared to income decentralization across all models. Furthermore, the analysis shows that the Economic Responsibility Audit (ERA) does not moderate the relationship between fiscal decentralization and corruption. These findings provide critical insights into the role of ERA in monitoring power and responsibility and offer valuable guidance for shaping anti-corruption governance policies.

### *5.1. Implications*

The results underscore that increased decentralization of both income and expenditure contributes to higher corruption levels, with expenditure decentralization exerting the most significant influence. This outcome highlights the need for a more balanced approach to China's fiscal decentralization system [1]. The current system is marked by a fundamental contradiction between fiscal decentralization and vertical administrative centralization, compounded by inadequate regulation of the decentralization process. This lack of standardization creates opportunities for local government officials to engage in rent-seeking behavior. Additionally, while income responsibilities are clearly defined, the division of expenditure responsibilities remains ambiguous. This issue is particularly evident in large project expenditures, where overlapping responsibilities among various levels of government result in inefficiencies, mismanagement, and opportunities for corruption as officials exploit gaps in accountability [28].

### *5.2. Limitations*

This study acknowledges several limitations. First, it relies on only two audit indicators, which may not comprehensively capture the full effectiveness of ERA audits. Future studies should incorporate more diverse and detailed indicators to provide a more holistic evaluation. Second, the data for these two indicators are incomplete and subject to flaws, as the audit yearbook only began disclosing provincial data in 2012. Third, while corruption data were sourced from the provincial procuratorate's annual work reports, changes in government agencies and anti-corruption policies introduced in 2018 have led to inconsistencies in case filing standards and the statistical classification of corrupt officials. These discrepancies may have resulted in inaccuracies in the reported number of corrupt personnel.

### *5.3. Future Research Suggestions*

Given the limitations of this study, future research should address the following areas to further refine our understanding of the relationship between fiscal decentralization, corruption, and the ERA. First, more diverse and detailed audit indicators should be incorporated to better assess the effectiveness of the ERA. Second, future studies could focus on overcoming the data limitations and inconsistencies caused by changes in anti-corruption policies and government agency structures. Lastly, research could explore the role of legal institutions and other governance frameworks in strengthening the effectiveness of the ERA to mitigate corruption, particularly in regions with high levels of fiscal decentralization.

In conclusion, this study highlights the challenges posed by fiscal decentralization in China, particularly its role in exacerbating corruption, and emphasizes the need for more robust governance frameworks. While the ERA holds potential as a deterrent against corruption, its current implementation requires greater alignment with legal and administrative systems to enhance its effectiveness. Future research should address the limitations noted here to further refine our understanding of the relationship between fiscal decentralization, corruption, and the ERA.

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