International Business & Economics Studies
ISSN 2640-9852 (Print) ISSN 2640-9860 (Online)
Vol. 7, No. 1, 2025
www.scholink.org/ojs/index.php/ibes

Original Paper

Government Intervention and Resource Dependence

Siyu Wang[1*]

[1*] Siyu Wang, Business School, Shandong University of Technology, Zibo, China

Received: December 29, 2024 Accepted: January 22, 2025 Online Published: February 14, 2025

doi:10.22158/ibes.v7n1p71 URL: http://dx.doi.org/10.22158/ibes.v7n1p71

Abstract

As the global resource pressure intensifies and environmental problems become increasingly prominent, the government plays a vital role in regulating the market economy, guiding industrial upgrading and promoting green technology innovation. Through effective policy intervention, the government can not only improve the efficiency of resource use but also encourage the development of green consumption patterns and a circular economy, thus encouraging the social economy and ecological environment to develop in tandem. This analysis was based on panel data of 265 prefecture-level cities from 2006 to 2022. First, this paper uses the baseline regression model to explore the direct effects of government intervention on regional resource dependence. Secondly, the mediation effect model is used to explore the mechanism and path of government intervention on resource dependence. The results show that government intervention has a significant positive direct effect on resource dependence, and the effect shows the characteristics of "East > Midwest"; The government can indirectly restrain regional resource dependence by improving energy consumption and economic agglomeration, and breaking the "resource curse". This study offers a theoretical framework and scientific foundation for achieving resource efficiency and avoiding the "curse" of resources.

Keywords

resource dependence, mediating effect, government intervention, resource curse

1. Introduction

In the global economic landscape, resource-dependent economies have long been plagued by the "resource curse" - a remarkable paradox between natural resource endowments and economic growth. The phenomenon of over-reliance on natural resources has become increasingly apparent, and the development dilemma of resource-based economies has become increasingly prominent, which not only intensifies resource consumption but also has a profound impact on the ecological environment. With the advancement of globalization and the deepening of regional economic integration, the problem of resource dependence has become increasingly apparent in the development process of many

countries and regions. Resource-dependent regions often face multiple difficulties such as economic fragility, single industry and environmental degradation, which seriously affect their sustainable development ability. In this context, government intervention, as an important macro-control means, how to play a positive role in the process of restraining regional resource dependence has become the focus of academic circles and policymakers. Resource dependence refers to the degree of dependence of a region on natural resources, energy resources or certain specific resources in the process of economic development. High resource dependence not only leads to a single regional economic structure and lack of resilience to risks but also may exacerbate environmental pressures and social imbalances. The National Development and Reform Commission estimated that China would use 5.72 billion tons of standard coal for energy in 2023, a 5.7% increase from the year before. Among them, coal consumption increased by 5.6%, crude oil consumption increased by 9.1%, natural gas consumption increased by 7.2%, and electricity consumption increased by 6.7%. The consumption of coal makes up 55.3% of all energy used, and the data shows that it is urgent to reduce the region's resource dependence. Government intervention is the key variable to break the resource curse, and the choice and implementation intensity of its policy tools directly affect the efficiency of transformation. At present, government intervention has become an important driving force to curb regional resource dependence. Then, what is the internal mechanism of government intervention to curb regional resource dependence? Further, based on the characteristics of regional heterogeneity in China, does government intervention have unique characteristics on regional resource dependence?

The structure of the remainder paper is as follows: The second part combs the relevant research on government intervention and resource dependence; The paper's theoretical analysis and research hypothesis are expounded upon in the third section. The fourth component introduces the data source, the developed model, and the measurement of pertinent variables. The empirical findings of this study are thoroughly analyzed in the fifth section, after which we present the paper's key findings and prospects.

2. Literature Review

2.1 Relevant Research on Government Intervention

Through top-level design and macro guidance, the government can provide important support for high-quality economic development and the country's low-carbon transformation. The existing researches on government intervention mainly focus on its effects and influencing factors. In terms of effects, government intervention can manage the environmental effects of enterprises (Hadi et al., 2020), influence the technological innovation of renewable energy (Zhao & Zhou, 2021), and inhibit carbon emission efficiency (Zhao et al., 2023). At the same time, government intervention affects environmental performance, market performance, and social welfare (Soohoon & Ho, 2022), and the quantitative and qualitative effects of corporate environmental information disclosure (Hossein et al., 2021). In terms of influencing factors, the efficiency of financial institutions plays a regulating role in

the effectiveness of government intervention (Duan et al., 2025), and the optimized operation of large funds can take advantage of government intervention (Meng et al., 2024).

2.2 Research on Resource Dependence

So what is the role of resources in economic growth, and how to restrain regional resource dependence and turn the "resource curse" into the "resource Gospel"? The academic circle has done a lot of research on resource dependence, and the existing research mainly focuses on its solution and action path. The industrial transformation of resource-based cities can break through the lock-in effect of natural resource dependence (Mao et al., 2021). Resource-based cities can also alleviate resource dependence and break the "resource curse" through industrial transformation (Wang & Li, 2025). The performance of resource curse is different in different stages of economic development. Further improvement of policy quality can transform the resource curse into well-being and restrain resource dependence (Chung & Jin, 2025). The digital economy can play a role in reducing the dependence of resource-based cities on natural resources (Luo et al., 2024).

There is still some room for improvement in the research on government intervention and resource dependence. First, the deep relationship between government intervention and resource dependence needs to be further enriched. Secondly, most scholars only discuss the impact of government intervention on resource dependence from the policy level, lacking a direct analysis of the role of government. Third, the complex nonlinear relationship between government intervention and resource dependence needs further study.

Different from previous studies, this paper will focus on analyzing the complex impact of government intervention on regional resource dependence, and make innovative contributions in the following three aspects: First, connect government intervention and regional resource dependence, and explore the deeper relationship between them; Secondly, from the perspectives of energy consumption and economic agglomeration, the mechanism of how government intervention affects resource dependence is revealed. Finally, combined with the heterogeneity of China's regional development, this paper deeply analyzes the heterogeneity of government intervention on resource dependence, offering both theoretical and practical benefits for the region's sustainable growth and the building of a beautiful China.

3. Mechanism Analysis and Research Hypothesis

3.1 Direct Conduction Mechanism and Research Hypothesis

Based on the above studies, this paper argues that government intervention can directly affect resource dependence from the two aspects of industrial policy regulation and environmental regulation.

On the one hand, based on the theory of industrial agglomeration, the government can guide capital to flow to non-resource-based industries (such as manufacturing and service industries) through tax incentives, subsidies or technical support, to reduce the proportion of resource sectors in the economy. At the same time, high-tech related enterprises can be introduced to attract the entry of innovative

factors, which can exert the scale effect (Jiao et al., 2024), so that more technology-oriented industries such as big data, artificial intelligence and new energy can be clustered, and capital, talent and other factors can be gathered. This promotes the local economic development toward green and digital industries, gradually getting rid of excessive dependence on natural resources, and reducing regional resource dependence.

On the other hand, the government can carry out strict supervision and force high-energy-consuming and high-polluting enterprises to transform and upgrade through environmental regulations. At the same time, the implementation of a carbon emission tax increases the cost of enterprise resource development. This further forces enterprises to improve production, assembly, storage, transportation and other links to reduce the cost of resource development and transform enterprises into high-value-added industries. This reduces regional resource dependence and promotes the improvement of regional environmental quality.

Hypothesis 1: Government intervention can directly reduce regional resource dependence.

3.2 Indirect Conduction Mechanism and Research Hypothesis

Through regulations to lessen the region's reliance on non-renewable resources, the government has steered the shift in energy consumption from traditional fossil fuels like coal and oil to renewable energy sources like solar and wind. At the same time, the government guides residents and enterprises to reduce consumption of energy-intensive products through price signals (Yang et al., 2024), resulting in the contraction of upstream resource mining capacity, which forces the contraction of traditional resource-based industries, reduces the proportion of resource-based industries in the regional economy, and makes the regional resource dependence decline.

Economic agglomeration is usually accompanied by industrial agglomeration and diversification (Wang & Luo, 2025). Under the agglomeration effect, enterprises can share resources such as infrastructure, technology and talents, which enhances regional self-development ability. Government intervention can further curb resource dependence by optimizing resource allocation, supporting green innovation, and promoting efficient energy use. The effect of government intervention on resource dependence is also shifted to promote more efficient resource allocation, rather than relying solely on a certain resource for development. In doing so, governments can guide and facilitate the green transition and promote the spread and application of low-carbon technologies to achieve the Sustainable Development Goals. Such transformation can help reduce the region's dependence on traditional resources and further enhance the resilience and competitiveness of the regional economy.

Hypothesis 2: The level of energy consumption and economic agglomeration plays a mediating role in government intervention to restrain regional resource dependence.

4. Model Building and Variable Measurement

4.1 Model Construction

The direct and indirect impacts of government intervention on regional resource reliance are examined

using the fixed-effect model to validate the two hypotheses presented in this study. To this end, this paper constructs the following basic regression model:

$$RD_{it} = \alpha_0 + \alpha_1 Gov_{it} + \alpha_n X_{it} + \gamma_t + \mu_i + \varepsilon_{it} \quad (1)$$

Where i and t are regions and years respectively, represents resource dependence, represents government intervention degree, and represents control variables in the model, including urbanization level ($Urban$), per capita gross regional product ($pergdp$), economic structure (ES) and science and technology level (SCI). In addition, in equation (1), represents the intercept term, and represents the year-fixed effect; is a permanent urban impact. is a phrase for random disruption.

4.2 Measurement and Description of Variables

4.2.1 Explained Variables

In this paper, referring to the research of Shao et al. (2010), the explanatory variable is the percentage of workers employed in the mining sector relative to all workers.

4.2.2 Core Explanatory Variables

Government intervention degree (Gov) refers to the study of Xie S et al. (2024), and is expressed by the ratio of regional budget expenditure to regional GDP.

4.2.3 Control Variables

To control the influence of other factors on resource dependence, this paper refers to the studies of Tang JR, Guo (2021) and Xie et al. (2024), and adds a series of control variables. Urbanization level ($Urban$): the proportion of permanent residents in cities to all permanent residents; per capita gross regional product ($pergdp$): the local population's share of the gross regional product; Economic structure (ES): the proportion of tertiary industry value added to GDP; Science and technology development level (SCI): symbolized by the percentage of government spending on research and technology relative to overall spending.

4.3 Data Sources and Descriptive Statistics

265 cities at the prefecture level between 2006 and 2022 were chosen as study samples for this work. The statistics were removed since Hong Kong, Macao, Taiwan, and Tibet lacked energy data. Data sources: National Patent Office, National Bureau of Statistics, China Statistical Yearbook, China Environmental Statistical Yearbook, etc. To improve the accuracy and reliability of the estimation and

avoid heteroscedasticity and multicollinearity, logarithmic processing was carried out on the relevant variables. Due to some data missing, the linear interpolation method was used to fill in the paper. Table 1 displays each variable's descriptive statistical findings.

Table 1. Descriptive Statistics Of Variables

VarName	Obs	Mean	SD	Min	Median	Max
RD	4505	5.2671	8.8004	0.0001	1.4314	57.8231
Gov	4505	0.1840	0.0953	0.0426	0.1600	1.4852
$Urban$	4505	0.5353	0.1671	0.1151	0.5200	1.1779
$pergdp$	4505	10.5306	0.7198	4.5951	10.5732	13.0557
ES	4505	0.4091	0.1020	0.1122	0.4000	0.8387
SCI	4505	0.0155	0.0163	0.0000	0.0105	0.2068

5. Empirical Results and Analysis

5.1 Analysis of Benchmark Regression Results

The regression findings for the degree of resource reliance and government involvement are displayed in Table 2 (Note 1). According to Table (2), column (1) is the regression result without adding control variables, and column (2) is the regression result with adding control variables. The influence coefficient of government intervention on regional resource dependence is -3.077, and is significantly negative at the 1% level, indicating that government intervention can effectively inhibit regional resource dependence on the whole, which verifies that government intervention can directly inhibit regional resource dependence as proposed in hypothesis 1 of this question.

In terms of control variables, the core coefficient of economic structure is -8.691, which is significantly negative at a 1% level, that is, when the level of economic structure increases by 1 percentage point, the resource dependence will decrease by 8.691, which indicates that the improvement of economic structure level can effectively restrain resource dependence. The possible reason is that, with the intervention and support of the government, more and more digital technology-related enterprises are pouring in, driving the change of local economic structure, further transforming the original industrial industry, and improving economic benefits while restraining the resource dependence on local enterprises, which echoes the research of Wang L et al. (2024). The coefficient value of the science and technology development level is positive and is significantly positive under the 1% condition, that is, for a 1% increase in the science and technology development level, resource dependence will increase by 14.093. This may be because technological progress, especially innovation in the fields of information technology, energy technology and materials science, is often accompanied by higher demand for resources as new high-tech industries and devices emerge, and may be accompanied by resource allocation problems, and improper measurement of resource allocation may worsen resource allocation and accelerate resource dependence. This echoes the research of Bettemir Onder Halis

(2025).

Table 2. Baseline Regression Result

	(1)	(2)
	RD	*RD*
Gov	-4.480***	-3.077**
	(1.276)	(1.215)
Urban		-1.156
		(1.105)
pergdp		0.234
		(0.283)
ES		-8.697***
		(1.909)
SCI		14.093***
		(4.450)
Constant	2.276***	6.267
	(0.343)	(3.912)
Year-fix	YES	YES
Id-fix	YES	YES
Observations	4,505	4,505
R-squared	0.906	0.908

5.2 Heterogeneity Analysis

Considering that there are significant differences in resource dependence, economic development level and industrial structure among different regions, this paper further conducts a regional heterogeneity test. In particular, the central, western, and eastern areas have different characteristics in terms of economic transformation, resource endowment and implementation intensity of government intervention policies, which may lead to regional differences in the restraining effect of government intervention on resource dependence. Therefore, this paper discusses the effect difference of government intervention in different regional backgrounds through the analysis of the east, middle and western regions, to better understand the mechanism of government intervention in regional economic development (Note 2).

Under the 1% scenario, the core coefficient for the central and western areas is -4.306, which is considerably negative. Indicating that the central and western regions have a significant inhibition effect on resource dependence, and the inhibition effect is significantly higher than that of the eastern region. This discrepancy might result from variations in resource reliance, economic structure

transformation and industrial diversification between the central and western regions and the eastern regions. Specifically, the central and western regions may be more dependent on traditional resource-based industries, so the intensity and effect of government intervention are more obvious, helping to accelerate the reduction of resource dependence. However, due to the relatively diversified economic structure and low dependence on resources, government action has a negligible marginal impact in the eastern region. The degree of government participation varies by region, as this result illustrates.

Table 3. Heterogeneity Test

	(1)	(2)
	Eastern	Central and Western
Gov	-0.327	-4.306***
	(-0.47)	(-2.64)
$Urban$	-4.820***	0.904
	(-2.67)	(0.61)
$pergdp$	1.043***	0.312
	(3.21)	(0.69)
ES	-5.024***	-8.133***
	(-2.64)	(-2.93)
SCI	17.18***	10.57*
	(2.99)	(1.65)
Constant	-2.955	10.08*
	(-0.80)	(1.78)
Year-fix	Yes	Yes
Id-fix	Yes	Yes
Observations	1547	2958
R-squared	0.899	0.907

5.3 Lag Analysis

To more accurately capture the dynamic impact of government intervention policies on resource dependence, taking into account that there may be different lag periods for policy effects, this paper further conducts effect tests for the first, second and third periods of lag. Specifically, the implementation effect of government intervention may not only appear in the short term but also gradually play a role in the medium and long term. This paper aims to systematically analyze the effects of government intervention in different periods by delaying the first, second and third periods, to reveal the timeliness and sustainability of policy measures to curb resource dependence. This test can

effectively eliminate the interference of short-term fluctuations, deeply explore the lag of policy effects, and provide a more detailed time dimension reference for policy adjustment.

The results of the three-stage lag test show that the inhibition effect of government intervention on regional resource dependence is still significant during the lag period. This result indicates that government intervention policies can not only significantly reduce resource dependence in a short period, but also have a sustained inhibitory effect on resource dependence after a certain period. Specifically, the test results of the first, second and third stages lag significantly negative under 1% condition, demonstrating that, at various points after implementation, the impact of government involvement has a notable inhibiting effect. Moreover, this effect has continuity and lag, which reveals the long-term role of government intervention in the inhibition of resource dependence and provides an important time-frame perspective for policy formulation and evaluation.

Table 4. Hysteresis Test

	(1)	(2)	(3)
	lag1	lag2	lag3
Gov	-3.539***	-3.576***	-3.123**
	(-2.82)	(-2.62)	(-2.26)
Constant	7.046*	7.941**	9.073**
	(1.87)	(1.99)	(2.13)
Control	YES	YES	YES
Year-fix	YES	YES	YES
Id-fix	YES	YES	YES
Observations	4240	3975	3710
R-squared	0.907	0.905	0.903

5.4 Mechanical Analysis

This paper adopts the mediation effect test method, and refers to Jiang T (2022) to analyze the mediation effect in the causal inference research, and studies the mechanism of the effect of the national industrial transfer demonstration zone policy on the employment creation effect proposed in the theoretical analysis section above. This paper sets model (3) to conduct the mediation effect test:

$$mediation_{it} = \vartheta_0 + \vartheta_1 Gov_{it} + \vartheta_n X_{it} + \gamma_t + \mu_i + \varepsilon_{it} \quad (2)$$

(1) Energy consumption (EC). Referring to the research of Wu JS et al. (2014), the average energy consumption of prefecture-level cities is used to represent.

According to the results in column (1) of Table 5, when is the explained variable, the coefficient of is

significantly negative at the 5% level. By setting strict energy efficiency standards, and providing subsidies and incentives, the government pushes enterprises and residents to improve energy efficiency, which can not only reduce overall energy consumption but also reduce the demand for raw materials and energy resources, thereby curbing regional resource dependence. In addition, the intervention of the government, through policy incentives, to encourage regional energy consumption pathways to become more diverse, lessen reliance on a single energy source, and guide market players to strengthen investment and technological innovation, especially in the fields of energy efficiency, clean energy, energy storage, promote the development of regional green industries, further reduce resource dependence, curb regional resource dependence.

(2) Economic concentration level (Eag). Refer to the study of Dai and Liu (2022), which is characterized by the ratio of the gross domestic product (ten thousand yuan) to the land area (square kilometers) of the municipal district.

According to the results in column (2) of Table 5, when is the explained variable, the coefficient of is significantly negative at the 1% level. Through policy guidance and financial support, the government can promote the transformation of traditional resource-intensive industries to high-tech and high-value-added industries, promote the improvement of the level of economic agglomeration, and further promote the diversification of local industries and scientific and technological innovation, so that economic development is no longer overly dependent on the exploitation and natural resource use to lessen reliance on conventional resources. At the same time, the government can promote the construction of a "smart city", effectively play the effect of industrial agglomeration, improve the local transportation, logistics and energy management system, enhance urban operations' efficiency and economic growth, lessen reliance on energy resources while encouraging the best possible resource allocation, and lessen reliance on regional resources.

Table 5. Mechanical Test

	(1)	(2)
	EC	Eag
Gov	-39291.1**	-0.921***
	(-2.46)	(-3.44)
Constant	302449.5***	5.599***
	(5.37)	(6.44)
Control	Yes	Yes
Year-fix	YES	YES
Id-fix	YES	YES
Observations	4505	4505

R-squared	0.939	0.820

6. Conclusions and Recommendations

Using data gathered from 265 cities at the prefecture level between 2006 and 2022, this paper expounds on the impact of government intervention on regional resource dependence from the aspects of direct and indirect effects. The main conclusions are as follows: (1) Government intervention can effectively restrain regional resource dependence; (2) Government intervention can reduce regional resource dependence by reducing regional energy consumption and improving regional economic agglomeration; (3) The heterogeneity of "eastern region > central and western region" is highlighted. This study makes the following recommendations to better accomplish regional development, based on the aforementioned studies.

(1) To combat excessive concentration and resource misuse, the government should tighten its oversight of the resource sector. Fair market regulations and competition laws are two ways the government may encourage the resource industry's healthy growth and lessen reliance on resources. The government ought to support businesses in their efforts to innovate technology, upgrade their industries, and increase resource use efficiency. The government can promote technological transformation and industrial transformation of enterprises to reduce over-dependence on resources by providing policy support such as R&D funds and tax incentives. Although government intervention has certain positive effects, the precision and flexibility of policy implementation still need to be further strengthened. Future studies may look at developing a framework for dynamic policy assessment in response to the quickly shifting economic landscape. In the process of policy implementation, local governments should flexibly adjust the intensity and direction of policy measures according to the actual situation to ensure the realization of policy objectives. For example, periodic evaluation and feedback mechanisms can be used to monitor policy effects in real time, and timely adjust policy implementation strategies based on evaluation results to avoid waste of policy resources.

(2) The government should strengthen international cooperation to jointly deal with challenges such as global resource shortage and climate change. The effective use of global resources may be encouraged by governments and sustainable development by signing international conventions and launching cooperative projects. The Government should strengthen public education and publicity to raise the community's awareness and attention to resource issues. The government can guide the public to develop good habits of saving resources and protecting the environment by carrying out publicity activities such as resource conservation and environmental protection, to reduce the resource dependence of the whole society.

(3) The government can impose a "skills tax" on traditional resource industries, arrange 5G+ industrial Internet nodes in resource-based cities, reduce the entry cost of emerging enterprises, let more technology-based enterprises enter the local market, and promote the local industrial structure's modernization and optimization. In addition, the entry of new enterprises can improve regional

research and development capabilities, help local industries gradually get rid of the dilemma of high energy consumption and high pollution, and in the long run, effectively reduce the region's dependence on natural resources.

(4) In the process of reducing resource dependence, the government should refrain from over-interfering in the market and continue to play a part in it. Therefore, future policies should pay more attention to the collaboration between the government and the market. By providing policy incentives and optimizing the business environment, the government can guide market players to make structural adjustments and encourage technological innovation and industrial upgrading. This kind of interaction mechanism between the market and the government can effectively mobilize the vitality of the market and avoid the negative impact of policy simplification or excessive intervention in the market economy. There are differences in resource dependence degree and economic structure in different regions, and the effect of government intervention policies may also be affected by regional economic development stage, policy environment and social and cultural factors. Therefore, it is recommended that the government strengthen policy coordination and experience sharing among different regions. Through the establishment of a cross-regional policy research platform, the replication and promotion of successful cases are promoted, and to increase the effectiveness and impact of policy implementation, local governments are urged to share knowledge during the policy design and implementation process.

Even though this study quantifies and examines how government involvement affects resource reliance and puts forward suggestions according to the actual situation, there are still some limitations: (1) This paper takes 265 cities across the country as the research object, and subsequent research can try to sink to the research level and incorporate micro-data of industries or enterprises to carry out specific research. (2) This paper explores the mechanism of government intervention in resource dependence. In subsequent studies, we can try to include other mediating or regulating variables, such as energy consumption structure, to more comprehensively reveal the mechanism black box of government intervention on resource dependence.

References

Bettemir, Ö. H. (2025). Analysis of Existing Resource Distribution Metrics and Suggestion of New Metrics. *Journal of Construction Engineering and Management*, *151*(2). https://doi.org/10.1061/JCEMD4.COENG-15085

Chung, C., & Jin, T. (2025). Revealing the role of institutional quality and geopolitical risk in natural resources curse hypothesis. *Resources Policy*, 100105457-105457. https://doi.org/10.1016/j.resourpol.2024.105457

Dai, X. L., & Liu, W. (2022). Industrial Digitalization, Technological Innovation and Urban Economic Resilience. *China Business and Market*, *36*(12), 81-91.

Duan, C., Soh, N. W., Ong, S. T. et al. (2025) Evidence from financial freedom moderating the

relationship between government intervention and financial stability. *Finance Research Letters*, 72106556-106556. ttps://doi.org/10.1016/j.frl.2024.106556

Hadi, T., Chaharsooghi, K. S., Sheikhmohammady, M. et al. (2020). Pricing strategy for a green supply chain with hybrid production modes under government intervention. *Journal of Cleaner Production*, *268*(prepublish). https://doi.org/10.1016/j.jclepro.2020.121945

Hossein, K., Nader, A., Armin, J. et al. (2021). Investigating the level and quality of the information in the environmental disclosure report of a corporation considering government intervention. *International Journal of Production Economics*, (prepublish), 108071-. https://doi.org/10.1016/j.ijpe.2021.108071

Jiang, T. (2022). Mediating Effects and Moderating Effects in Causal Inference. *China Industrial Economics*, (05), 100-120.

Jiao, Y., Wang, G. F., Li, C. Y. et al. (2024). Digital inclusive finance, factor flow and industrial structure upgrading: Evidence from the yellow river basin. *Finance Research Letters*, *62*, 105141-. https://doi.org/10.1016/j.frl.2024.105141

Luo, H., Yang, B., Liu, Z. J. et al. (2024). The bright and dark sides: Unpacking the effect of digital economy on resource curse. *Journal of Cleaner Production*, *485*, 144351-144351. https://doi.org/10.1016/j.jclepro.2024.144351

Mao, W. X., Wang, W. P., Sun, H. F. et al. (2021). Urban industrial transformation patterns under natural resource dependence: A rule mining technique. *Energy Policy*, 156. https://doi.org/10.1016/j.enpol.2021.112383

Meng, B. S., Wu, X., & Yao, J. X. (2024). Coordination between government intervention and market mechanisms: Evidence from China's national integrated circuit industry investment fund. *Studies in Science of Science*, *42*(09), 1877-1885. https://doi.org/10.2139/ssrn.4766945

Shao, S., & Yang, L. L. (2010). Abundance of natural resources, dependence of resource industry and regional economic growth in China. *Journal of Management World*, (09), 26-44.

Soohoon, P., & Ho, S. Y. (2022). Government intervention in environmental performance considering working capital issues: Control the supplier or the buyer?. *Computers & Industrial Engineering*, *163*. https://doi.org/10.1016/j.cie.2021.107790

Tang, J. R., & Guo, S. K. (2021). Industrial Agglomeration, Population Size and Environmental Pollution. *Statistics & Decision*, *37*(24), 46-51.

Wang, D., & Luo, H. Y. (2025). Effects of coordinated development of economic agglomeration and population agglomeration on regional carbon emissions. *Statistics & Decision*, *41*(02), 120-124.

Wang, L., Huang, J., & Wang, C. (2024). From Resource curse to digital economy Harmony in selected Belt and Road countries. *Resources Policy*, 97105282-105282. https://doi.org/10.1016/j.resourpol.2024.105282

Wang, Z. P., & Li, K. M. (2025). Can green finance exorcize the resource curse in China's resource-based cities? A geographically and temporally weighted regression (GTWR) analysis.

Journal of Environmental Management, *375*, 124184-124184. https://doi.org/10.1016/j.jenvman.2025.124184

Wu, J. S., Niu, Y., Peng, J. et al. (2014). Research on energy consumption dynamic among prefecture-level cities in China based on DMSP/OLS Nighttime Light. *Geographical Research*, *33*(04), 625-634.

Xie, S., Fang, K. L., & He, J. (2024). Can smart city construction promote digital-reality integration? Causal inference based on double machine learning. *Industrial Economics Research*, (04), 100-113.

Yang, Y. M., Wang, X. L., & Deng, X. H. (2024). Resource Dependence, Economic Growth and the Rebound Effect of Carbon Emissions. *Journal of Jishou University (Social Sciences)*, *45*(01), 105-115.

Zhao, G., Zhou, P., Wen, W. et al. (2021). Feed-in tariffs, knowledge stocks and renewable energy technology innovation: The role of local government intervention. *Energy Policy*, 156. https://doi.org/10.1016/j.enpol.2021.112453

Zhao, X. C., Long, L. C., & Zhou, Y. (2023). Green finance, government intervention and regional carbon efficiency. *Statistics & Decision*, *39*(10), 49-154.

Note(s)

Note 1. * denotes significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level. The standard error of robustness is shown in parentheses. The same table is provided below.

Note 2. Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong, and Hainan are in the eastern part of the study's sample; Inner Mongolia, Chongqing, Sichuan, Guangxi, Guizhou, Yunnan, Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang are located in the western region; and Shanxi, Jilin, Heilongjiang, Henan, Hubei, Hunan, Anhui, and Jiangxi are located in the central region.