**Editorial Introduction**

This issue of the Journal of International Relations and Area Development (JIRAD), Vol. 1, Issue 2, presents four research articles that address key themes in global governance, regional politics, and economic transformation.

In the first article, Song evaluates the green-transition efficiency of major high-energy-consuming sectors in Jiangsu using 2023 DEA data. The findings reveal high efficiency in the ferrous and non-ferrous metal industries, contrasted with notable redundancy in the chemical sector, offering evidence-based insights for differentiated and sector-specific pathways to green transformation.

In the second article, Guo employs a game-theoretical framework to analyze the interplay of competition and cooperation in Sino–US relations across economic, political, military, and technological spheres. The study argues that, despite deep strategic divergences, economic interdependence and global public-goods pressures make cooperation the strategy most consistent with both countries' long-term interests, and it provides policy recommendations for stabilizing bilateral ties.

In the third contribution, Li examines how political transformation in Indonesia has reshaped the political identity of the Chinese community—from historical marginalization and forced assimilation to gradual reconfiguration in the post-1998 democratic era. The article highlights remaining challenges, including religious nationalism, social barriers, and institutional constraints, which continue to impede full political integration and identity reconstruction.

In the fourth article, Zhang explores the historical origins, evolution, and contemporary relevance of ASEAN identity, emphasizing that today's regional integration rests upon deep-rooted cultural and historical consciousness. By tracing pre-ASEAN identities, colonial experiences, and overlapping national and regional affiliations, the study illuminates how these legacies continue to shape Southeast Asia's regional consciousness and the development of a shared ASEAN identity.

Together, these articles shed light on critical issues at the intersection of international relations and regional development, offering fresh perspectives that enrich academic discourse and inform policy practice.

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# Pathways for Green Transformation in the Manufacturing Sector under the Dual-Carbon Goals: An Empirical Analysis of the Steel and Chemical Industries in Jiangsu Province

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**ABSTRACT**

Under the strategic framework of China's dual-carbon goals, the manufacturing sector—being a major source of energy consumption and carbon emissions—faces increasing pressure to improve the efficiency of its green transformation. Jiangsu Province, as a leading manufacturing region, hosts large-scale high-energy-consuming industries, making it imperative to assess efficiency scientifically to identify transformation gaps and design differentiated pathways. This study focuses on three representative sectors: chemical raw materials and chemical products manufacturing, ferrous metal smelting and rolling, and non-ferrous metal smelting and rolling. Using cross-sectional data from 2023, a "two-input–one-output" framework is applied, with total assets and average employment as inputs and operating revenue as output. Efficiency is measured via DEA models (CCR and BCC), and a robustness check based on labor-only input is conducted. The results show that efficiency varies significantly across sectors. Ferrous and non-ferrous metal industries generally lie on the DEA frontier, while the chemical sector exhibits low efficiency and considerable input redundancy. The inefficiency in the chemical sector is mainly attributable to technical and managerial limitations rather than scale constraints. Efficiency sensitivity differs by input perspective: the chemical sector's disadvantage is more pronounced in labor terms, whereas the non-ferrous metal sector relies on the capital–labor combination effect. Accordingly, green transformation pathways should be sector-specific: the chemical sector should prioritize process optimization and technological innovation, while the ferrous and non-ferrous metal sectors should focus on deep decarbonization


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technologies and input-structure optimization while sustaining high efficiency. This study contributes by empirically revealing the efficiency heterogeneity of high-energy-consuming industries under dual-carbon constraints, clarifying the sources of inefficiency, and providing an evidence-based reference for policy-making, enterprise-level green transformation, and targeted financial support.

## 1. Introduction

The intensification of global climate change and increasing resource and environmental constraints have made green and low-carbon transformation a widely recognized consensus and policy focus internationally. The United Nations Paris Agreement explicitly calls for limiting the global average temperature rise to well below 2°C, while pursuing efforts to cap it at 1.5°C. Achieving this target poses profound challenges to national economic development models and energy utilization patterns, and has catalyzed a global research agenda on carbon reduction pathways, energy structure optimization, and industrial upgrading (Cheng et al., 2023). In this context, China proposed its "carbon peaking and carbon neutrality" strategy in 2020, aiming to reach peak carbon emissions before 2030 and achieve carbon neutrality by 2060. This commitment not only represents China's contribution to global climate governance but also serves as an intrinsic requirement for promoting high-quality economic and social development.

As the sector with the highest concentration of energy consumption and carbon emissions, the efficiency of green transformation in the manufacturing industry is directly linked to the achievement of the dual-carbon goals (Zhang et al., 2023). Within China's manufacturing landscape, Jiangsu Province has long ranked among the top regions, with large industrial scale and high total energy consumption and carbon emissions. Although Jiangsu has made certain progress in green development and emission reduction in recent years, high-energy-consuming and high-emission industries continue to face substantial decarbonization pressure, making the task of green transformation formidable (Chen et al., 2021).

Among these industries, chemical raw materials and chemical products manufacturing exhibits significant environmental pressure due to long industrial chains and complex emission types; ferrous metal smelting and rolling, as a typical foundational industry, is characterized by high energy consumption and emissions, making it a key area for industrial low-carbon governance; non-ferrous metal smelting and rolling possesses certain advantages in capital and output efficiency but still faces challenges in deep decarbonization (Zheng et al., 2022). Although all three sectors are high-carbon-emitting industries, they differ markedly in transformation pathways, efficiency levels, and constraint mechanisms, highlighting the need for systematic efficiency assessment and pathway design.

Against this backdrop, the present study offers dual contributions. Theoretically, it integrates frameworks from industrial economics and environmental economics and applies data envelopment analysis (DEA) to measure and compare the green transformation efficiency of high-energy-consuming industries, enriching the efficiency evaluation system for manufacturing sector green transformation. Practically, it empirically examines the utilization efficiency of capital and labor inputs across typical high-energy-consuming industries in Jiangsu, providing differentiated low-carbon transformation pathway recommendations. This not only supports enterprises in optimizing production factor allocation and green upgrading but also informs government policy-making for sector-specific green finance and decarbonization strategies.

Based on this rationale, this study addresses the following key questions: What is the level of green transformation efficiency in Jiangsu's manufacturing sector under the dual-carbon goals? What efficiency differences exist among the chemical, ferrous metal, and non-ferrous metal industries? Are inefficiencies primarily driven by scale constraints or by technical and managerial factors? How can differentiated green transformation pathways be designed accordingly? To answer these questions, this study adopts a mixed quantitative and qualitative research approach. Quantitatively, using 2023 industry statistics, DEA models (including CCR and BCC models, supplemented by single-factor robustness checks) are employed to measure and compare industry green transformation efficiency. Qualitatively, the study systematically analyzes industry transformation pathways by considering policy context, industry characteristics, and green development practices, thereby providing targeted policy recommendations and pathway optimization strategies.

## 2. Literature Review

### 2.1 Theoretical Foundations and Research Framework

Research on green transformation in the manufacturing sector is generally situated within the broader context of sustainable development and the low-carbon economy, with the central issue being how to achieve a dynamic balance between economic growth and environmental constraints. At the theoretical level, green total factor productivity (GTFP), energy efficiency, and the Environmental Kuznets Curve (EKC) constitute the primary analytical frameworks. GTFP comprehensively reflects overall economic efficiency after accounting for resource consumption and environmental emissions, and characterizes the interactions among technological progress, factor inputs, and environmental constraints (Cai & Ye, 2020). Studies on energy efficiency focus on maintaining economic output growth while reducing energy consumption and pollutant emissions, aligning closely with the high-energy-consuming nature of manufacturing. The EKC theory further elucidates the nonlinear relationship between environmental pollution and economic development, suggesting that pollutant emissions may follow an inverted U-shaped trajectory as the economy grows.

In terms of mechanism explanation, the Porter Hypothesis provides important theoretical support for green transformation. Empirical evidence shows that reasonable and stringent environmental regulations do not undermine corporate competitiveness; instead, they can incentivize firms to pursue green technological innovation, generating an "innovation compensation" effect that improves efficiency over the long term (Liu et al., 2022). Within this logic, environmental regulation, market incentives, and technological progress are regarded as three pillars driving green growth, and their positive interaction facilitates a dynamic balance between efficiency improvement and innovation in the manufacturing sector (Cheng et al., 2023).

### 2.2 Industry-Level Green Transformation Pathways

At the practical level, high-carbon industries such as steel and chemicals represent both the focal points and the major challenges of global manufacturing green transformation. International studies indicate that low-carbon pathways in the steel industry primarily focus on short-process technologies and raw material substitution. For example, scrap steel recycling and electric arc furnace (EAF) steelmaking are widely considered effective approaches to reducing carbon intensity, while advanced technologies such as hydrogen-based ironmaking and carbon capture, utilization, and storage (CCUS) represent deep decarbonization strategies (Sun et al., 2021; Jin et al., 2023). In the chemical industry, emphasis is placed on production process optimization and raw material substitution, achieving simultaneous reductions in energy consumption and emissions through green process development, renewable feedstock utilization, and clean production systems (Dandotiya et al., 2023). In these industries, technological advancement and policy incentives act as complementary mechanisms, jointly driving low-carbon transformation.

Domestic research closely aligns with China's dual-carbon strategic goals, emphasizing the coordinated advancement of carbon peaking, carbon neutrality, and high-quality development. At the macro level, scholars focus on industrial structure optimization, region-specific emission reductions, and the enhancement of local governance capacity (Yang et al., 2021). At the industry level, steel and chemical sectors remain research hotspots. Studies on the steel industry primarily address energy efficiency improvement, process optimization, and CCUS application demonstrations, including short-process steelmaking, process intensification, and green electricity substitution. Research on the chemical sector emphasizes green feedstock substitution and process intensification, covering the development of green catalysts, establishment of recycling systems, and minimization of hazardous waste (Ma et al., 2020). Comparative studies generally conclude that low-carbon transformation in the steel industry relies more on process and operational optimization, whereas in the chemical industry it depends on raw material substitution and process innovation, highlighting the complexity and sector-specific nature of transformation pathways.

### 2.3 Methodological Applications and Research Progress

In terms of research methods, efficiency measurement has become a crucial tool in studies of green transformation. Data Envelopment Analysis (DEA), super-efficiency Slack-Based Measure (SBM) models, and the Malmquist index are widely applied for both static and dynamic assessments of green efficiency. These methods can simultaneously account for multiple inputs and outputs, including undesirable outputs, thereby providing a more accurate depiction of green performance in the manufacturing sector (Zhao et al., 2022). Among them, the DEA-SBM model is frequently employed in carbon emission efficiency studies due to its adaptability to undesirable outputs, revealing differences in green efficiency across regions and industries as well as their dynamic evolution (Cai & Ye, 2020). The Malmquist index, by decomposing efficiency changes over time, distinguishes the contributions of technological progress and technical efficiency, offering a valuable tool for analyzing the dynamic evolution of green transformation.

Meanwhile, the Stochastic Frontier Analysis (SFA) method has also been applied in green efficiency research. Its advantage lies in identifying the sources of efficiency loss and revealing how institutional environments, technological levels, and factor allocation differentially affect efficiency (Liu et al., 2022). Supported by these methods, green total factor productivity (GTFP) has gradually become a key indicator for evaluating industrial structure optimization and emission reduction performance. Overall, the diversification of methodologies has significantly advanced research on green transformation, enabling scholars to uncover spatial-temporal variations and evolutionary patterns of manufacturing sector green efficiency from multiple perspectives.

### 2.4 Research Gaps and Study Positioning

Despite the accumulation of substantial literature, several gaps remain. First, contextualized studies at the region–industry level are relatively limited, and cross-industry systematic comparisons are scarce, resulting in insufficient understanding of the heterogeneity of green transformation pathways across industries. Second, the integration of efficiency measurement methods with industry practices remains insufficient; some studies overemphasize model calculations while neglecting alignment with practical emission reduction technologies and policy instruments, thereby weakening the policy relevance of their conclusions. Third, although the "regulation–innovation–performance" transmission mechanism has been explored to some extent, how local governments, industry associations, and enterprises collaboratively deploy policy tools to promote green transformation remains largely empirically untested (Zhang et al., 2022).

To address these gaps, this study focuses on Jiangsu Province—a major manufacturing hub in China—selecting the steel and chemical industries as the primary cases, with the non-ferrous metal sector as a reference. Methodologically, it combines DEA-based efficiency measurement with industry practice analysis, revealing differences in green transformation efficiency across industries while enhancing the

robustness of conclusions through sensitivity checks. The study aims to contribute to region–industry contextualized analysis, cross-industry comparison, and the integration of methodology with practice, providing empirical support and policy insights for the green transformation of high-carbon industries in China.

## 3. Research Methods

### 3.1 Data Source

All data employed in this study are obtained from the Jiangsu Statistical Yearbook 2024, which is compiled and published by the Jiangsu Provincial Bureau of Statistics. The yearbook provides comprehensive and authoritative statistical information on the province's economic and social development. For the purposes of this research, we extracted industry-level indicators related to the manufacturing sector, including energy consumption, fixed asset investment, labor input, and industrial output. These variables constitute the core dataset for evaluating the efficiency of green transformation. All figures and tables presented in the results section are derived from empirical modeling and analysis based on this dataset.

### 3.2 Model Selection and Theoretical Foundation

Under the dual-carbon constraints, the green transformation of the manufacturing sector hinges on improving the coordinated efficiency of factor inputs and outputs, particularly energy, capital, and labor. A central methodological challenge is how to rigorously assess the relative efficiency of industries in resource utilization and output generation. Efficiency evaluation methods are generally divided into parametric and non-parametric approaches. The former specifies a functional form of production and is prone to bias from model misspecification, while the latter does not require prior assumptions about the production function and instead constructs the efficiency frontier directly from observed data. This makes non-parametric methods particularly suitable for multi-indicator efficiency analysis at the industry level.

Among non-parametric methods, Data Envelopment Analysis (DEA) has been widely applied in studies of green development and industrial efficiency because it can simultaneously handle multiple inputs and outputs and delineate the production possibility frontier through linear programming. Given that green transformation emphasizes "minimizing inputs for a given output level," this study employs an input-oriented DEA model to measure the relative efficiency of industries in terms of energy, capital, and labor inputs. Let the j-th decision-making unit (DMU) have an input vector $x_j = (x_{1j}, x_{2j}, \dots, x_{mj})^T$ and an output vector $y_j = (y_{1j}, y_{2j}, \dots, y_{sj})^T$. Under the CCR model, the efficiency evaluation problem for the o-th DMU can be expressed as:

$$\min_{\theta,\lambda} \theta \tag{1}$$

$$s.t. \sum_{j=1}^{n} \lambda_j x_{ij} \le \theta x_{io}, \quad i = 1, \dots, m \tag{2}$$

$$\sum_{j=1}^{n} \lambda_j y_{rj} \geq y_{ro}, \quad r = 1, \ldots, s \tag{3}$$

$$\lambda_j \geq 0, \quad j = 1, \ldots, n \tag{4}$$

where θ represents the efficiency score and λj denotes the weight variables. When θ = 1 and all constraints are satisfied, the DMU lies on the efficiency frontier; otherwise, it exhibits varying degrees of efficiency loss.

To further distinguish technical efficiency from scale efficiency, this study introduces a convexity constraint in the BCC model—building on the CCR model assumption of constant returns to scale (CRS)—to capture variable returns to scale (VRS) conditions. The objective function is consistent with that of the CCR model, but the constraints are more stringent:

$$\sum_{j=1}^{n} \lambda_j = 1 \tag{5}$$

By comparing efficiency results from the CCR and BCC models, overall efficiency can be decomposed into pure technical efficiency and scale efficiency, thereby revealing the extent to which industries' green transformation is constrained by technological versus scale limitations.

### 3.3 Indicator Selection and Variable Construction

Based on data provided by the *Jiangsu Industrial Statistics Yearbook* and the characteristics of green transformation in manufacturing, this study constructs input and output indicators according to the principles of availability, representativeness, and relevance. For inputs, "total assets" and "average employment" are selected as proxies for capital and labor factors at the industry level. Total assets reflect the industry's capital stock and fixed investment scale, while average employment captures the level of labor input; together, they provide a comprehensive depiction of resource allocation across industries. For outputs, "operating revenue" is chosen as a representative indicator of economic output, reflecting both market creation capacity and, indirectly, the efficiency of resource utilization.

Accordingly, the structure of the DEA model can be formalized as:

$$X = \begin{bmatrix} x_{11} & x_{12} & \cdots & x_{1n} \\ x_{21} & x_{22} & \cdots & x_{2n} \end{bmatrix}, \quad Y = \begin{bmatrix} y_{11} & y_{12} & \cdots & y_{1n} \end{bmatrix} \tag{6}$$

where the input matrix X includes total assets and average employment, and the output matrix Y comprises operating revenue.

Regarding industry selection, this study focuses on typical high-energy-consuming and high-emission sectors within Jiangsu's manufacturing industry. The primary industries examined are "ferrous metal smelting and rolling" (i.e., steel industry) and "chemical raw materials and chemical products manufacturing" (i.e., chemical industry), with "non-ferrous metal smelting and rolling" serving as a reference to enhance comparability in efficiency measurement. These industries are prominent contributors to energy consumption and carbon emissions, and exhibit certain

differences in transformation pathways, providing empirical support for analyzing both the commonalities and heterogeneities of green transformation in Jiangsu's manufacturing sector.

### 3.4 Empirical Procedure and Robustness Design

The empirical procedure begins by treating industries as decision-making units (DMUs), constructing DEA models, and calculating industry efficiency scores under both constant returns to scale (CRS) and variable returns to scale (VRS) assumptions. By comparing CCR efficiency with BCC efficiency, the scale effects on industry efficiency can be further analyzed, revealing the extent of scale constraints and potential for optimization in different sectors' green transformation.

To ensure the robustness of the empirical results, a sensitivity test is designed. Specifically, the input indicator system is adjusted to retain only "average employment" as a single input, the DEA model is rerun, and the efficiency results are compared with those obtained under the original "two-input–one-output" framework. The testing logic can be simplified as:

$$\theta^{(1)} = f\left(X^{(2)}, Y\right), \quad \theta^{(2)} = f\left(X^{(1)}, Y\right) \tag{7}$$

where $\theta^{(1)}$ represents efficiency results under the dual-input system, and $\theta^{(2)}$ represents efficiency results under single labor input. If the efficiency rankings and relative differences remain largely consistent across both scenarios, the study's conclusions can be considered robust.

In summary, the empirical design follows a logical path of "model selection → indicator construction → efficiency measurement → robustness check," which not only reveals the current status and disparities of green transformation efficiency in the steel and chemical industries but also enhances the scientific rigor and credibility of the findings through methodological validation.

## 4. Results

### 4.1 Baseline Efficiency Measurement

To evaluate the green transformation efficiency of typical high-energy-consuming industries in Jiangsu Province under the dual-carbon constraints, industries were treated as decision-making units (DMUs) and assessed using an input-oriented DEA model. Inputs included "total assets" (100 million CNY) and "average employment" (10,000 persons), while "operating revenue" (100 million CNY) was used as the output. Efficiency scores under constant returns to scale (CRS) and variable returns to scale (VRS) assumptions are presented in Table 1.

**Table 1. Green Transformation Efficiency of Industries (Two Inputs–One Output)**

| Industry | Total Assets (100 million CNY) | Average Employment (10,000 persons) | Operating Revenue (100 million CNY) | CCR (CRS) Efficiency | BCC (VRS) Efficiency |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Chemical Raw Materials and Chemical Products Manufacturing | 10,699.54 | 30.98 | 9,384.61 | 0.5611 | 0.5687 |
| Ferrous Metal Smelting and Rolling | 9,256.30 | 21.44 | 12,721.05 | 1.0000 | 1.0000 |
| Non-ferrous Metal Smelting and Rolling | 2,938.15 | 13.05 | 6,074.06 | 1.0000 | 1.0000 |

As shown in Table 1, the efficiency scores of ferrous (steel) and non-ferrous metal smelting and rolling industries are equal to 1 under both the CCR and BCC models ($\theta = 1$), indicating that these two sectors lie on the DEA frontier based on the input-output framework employed in this study. There is no significant input redundancy or output insufficiency, and they can be considered the efficiency frontier within the sample.

By contrast, the chemical raw materials and products manufacturing industry exhibits a CCR efficiency of 0.5611 (BCC efficiency = 0.5687), far below 1. For an input-oriented DEA model, $\theta = 0.5611$ can be interpreted as follows: while maintaining the current output level, total inputs in this industry could theoretically be reduced to approximately 56.11% (a reduction of 43.89%) to reach the efficiency frontier. This indicates substantial input redundancy or insufficient output. The small difference between CCR and BCC scores for the chemical industry (CCR/BCC ≈ 0.987) suggests that scale efficiency is nearly 1, implying that the low efficiency is primarily attributable to technical or managerial factors—such as process level, workflow management, or limited green innovation—rather than scale constraints.

To visually present these results, Figures 1 and 2 illustrate the efficiency distribution of each industry under the CCR and BCC assumptions, respectively.

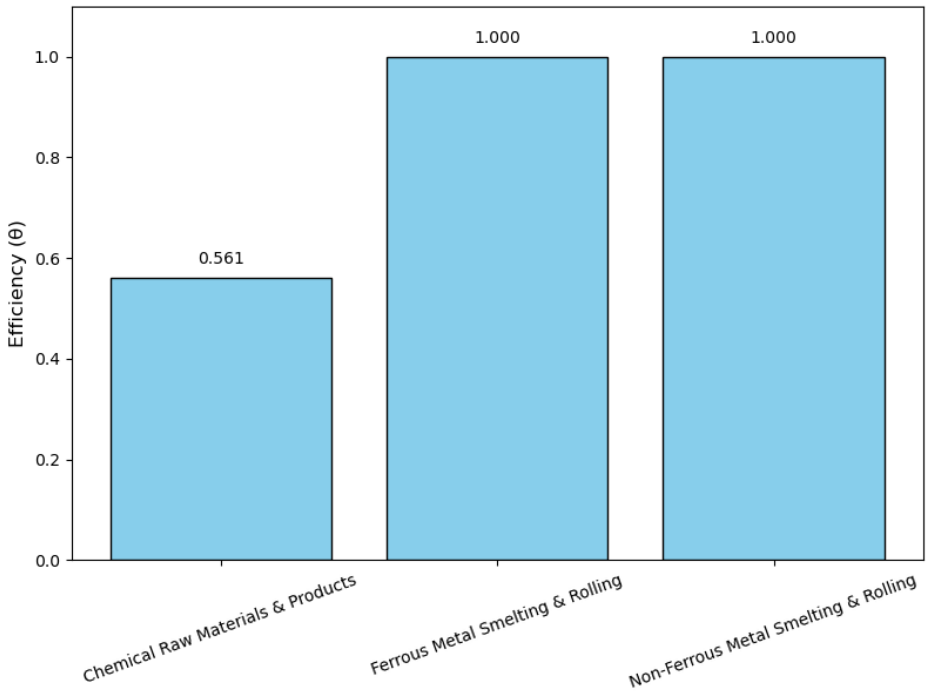


**Figure 1. CCR (CRS) Efficiency Results: Two Inputs–One Output**

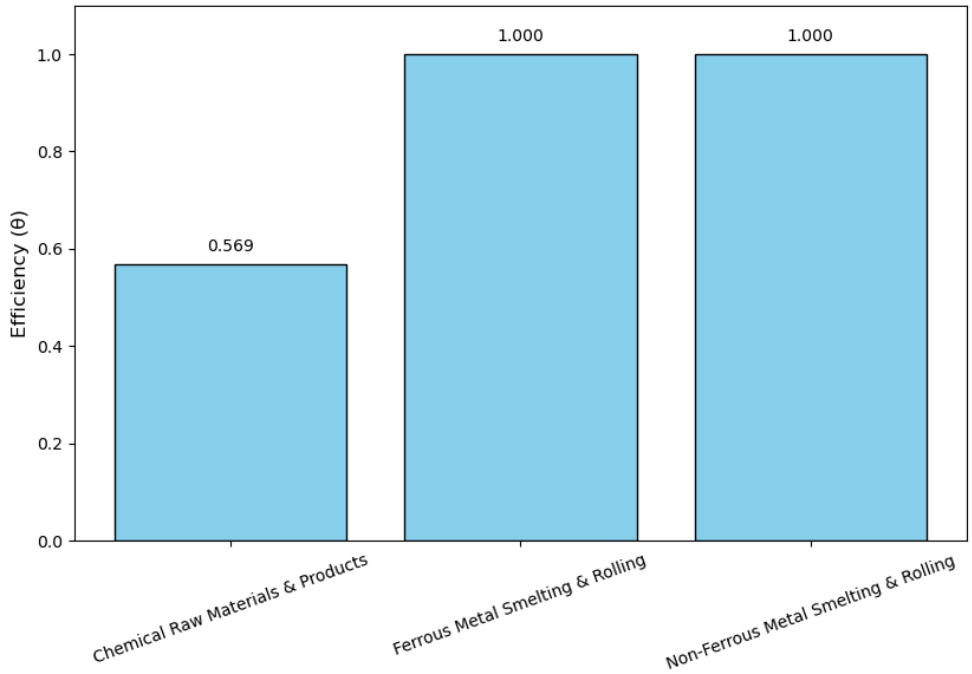


**Figure 2. BCC (VRS) Efficiency Results: Two Inputs–One Output**

Figure 1 shows that under the CRS assumption, ferrous and non-ferrous metal smelting and rolling industries achieve full efficiency (efficiency = 1), while the chemical raw materials and products manufacturing industry scores only about 0.561, lagging behind the other two sectors. This indicates considerable input waste or output insufficiency in the chemical industry under the context where overall production scale is linked to output, and its resource allocation efficiency does not reach the frontier level.

Figure 2 presents the VRS-based efficiency results. The ferrous and non-ferrous metal industries maintain full efficiency (efficiency = 1), further confirming their high factor utilization and output efficiency in green transformation. The chemical industry's efficiency shows a slight increase (from 0.561 to 0.569), but overall remains low. This suggests that even after accounting for potential scale inefficiencies, the low efficiency in the chemical sector is still driven by internal management, process technology, or insufficient green innovation, rather than scale limitations.

Overall, the results from both figures consistently indicate that the steel and non-ferrous metal smelting industries are on the efficiency frontier and remain relatively stable in the green transformation process, whereas the chemical industry exhibits efficiency disadvantages. This disparity highlights differences in green transformation pathways across industries and provides direct empirical evidence to inform subsequent policy recommendations.

## 4.2 Robustness Check

To further verify the robustness of the results and more intuitively illustrate inter-industry efficiency differences, two visualization tools were employed: radar charts and 3D efficiency frontier surfaces.

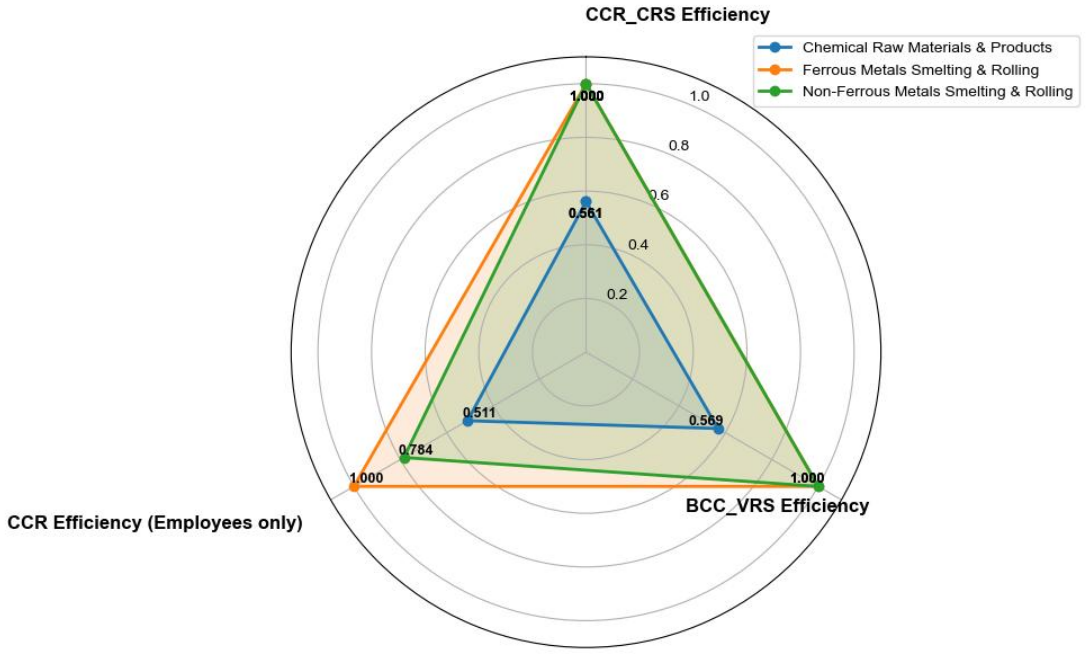


**Figure 3. Radar Chart of Industry Green Transformation Efficiency (Comparison of CCR, BCC, and Single Labor Input)**

The radar chart in Figure 3 visually compares the performance of each industry across different efficiency measures. The chemical raw materials and chemical products manufacturing industry exhibits generally low efficiency: CCR–CRS efficiency is 0.561, BCC–VRS efficiency is 0.569, and under the single-input (labor) scenario, efficiency further decreases to 0.511, highlighting its notable inefficiency. In contrast, ferrous metal smelting and rolling maintains full efficiency ($\theta = 1.000$) across all three dimensions, indicating optimal utilization of both labor and capital. The non-ferrous metal smelting and rolling industry reaches the frontier under the two-input scenario, but efficiency drops to 0.784 under the single labor input, suggesting that its efficiency relies on a reasonable combination of capital and labor.

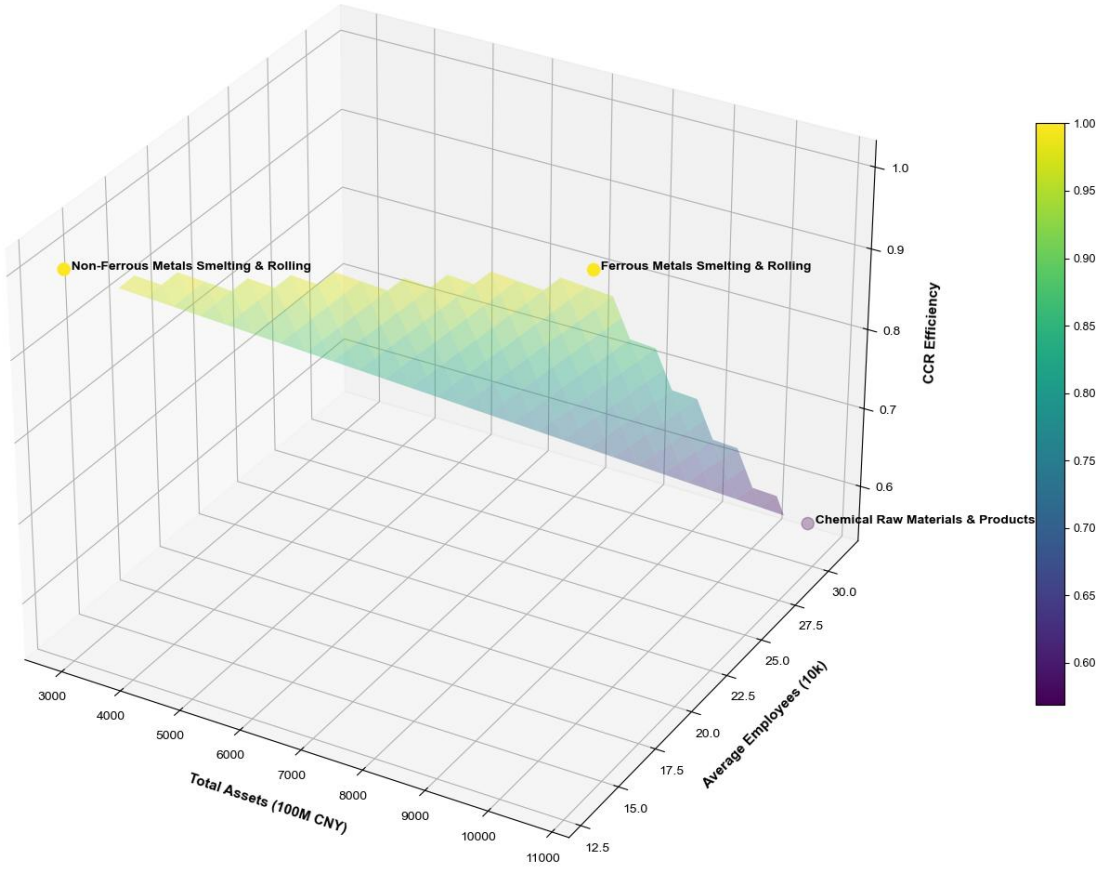


**Figure 4. 3D Distribution and Efficiency Frontier Surface of Industry Green Transformation (CCR Model)**

In Figure 4 (3D distribution and efficiency frontier based on CCR efficiency), the x- and y-axes represent total assets (100 million CNY) and average employment (10,000 persons), respectively, while the z-axis shows CCR (CRS) efficiency. Point colors are scaled by BCC (VRS) efficiency. Using griddata interpolation, the CCR efficiency of the three observed points is smoothed over the asset–labor plane to generate a semi-transparent surface, visually illustrating the spatial distribution of efficiency values with respect to the two inputs.

Combining with the specific values in Table 1: the chemical industry (total assets = 10,699.54, employment = 30.98) has CCR = 0.561 and BCC = 0.569; ferrous metal (total assets = 9,256.30, employment = 21.44) and non-ferrous metal (total assets = 2,938.15, employment = 13.05) industries both have CCR and BCC efficiencies of 1.000. In the 3D plot, the steel and non-ferrous metal points are positioned at the CCR = 1 level (the observed "efficient" points), while the chemical industry lies well below this height ($z \approx 0.561$), fully consistent with Table 1 values. This indicates that the former two industries form the DEA efficiency frontier in the sample and input-output framework, whereas the chemical industry exhibits a significant efficiency gap.

It should be noted that the plotted surface is an interpolated approximation of the three observed CCR values, not the DEA frontier strictly derived from linear programming. Due to the limited sample size (three points), the interpolated surface provides a qualitative visualization and may produce boundary artifacts or local

undulations; thus, it should be interpreted as a visual aid rather than a quantitative proof. Quantitatively, the DEA frontier remains represented by the θ values in Table 1. Based on this understanding, the key insights from Figure 4 are: (1) ferrous and non-ferrous metals reach the observed sample efficiency frontier under the applied input-output framework; (2) the chemical industry's CCR ≈ 0.561 (BCC ≈ 0.569) is substantially below 1, indicating a notable inefficiency primarily due to technical or managerial factors rather than scale effects. This reinforces the conclusion drawn from the CCR and BCC comparison.

Overall, these visualizations further strengthen the reliability of the baseline results: ferrous and non-ferrous metal smelting and rolling industries lie on the efficiency frontier and exhibit high resource allocation efficiency, whereas the chemical industry clearly lags, with inefficiency consistently demonstrated across different metrics and visual checks.

### 4.3 Result Analysis

Synthesizing the baseline measurements and robustness checks yields several insights:

(1) The ferrous metal smelting and rolling industry exhibits the highest efficiency, indicating a relatively balanced performance in energy conservation, emission reduction, and output creation. Its future green transformation efforts should focus on deep decarbonization and technological breakthroughs. (2) The chemical raw materials and products manufacturing industry shows significantly lower efficiency, highlighting substantial room for improvement in green processes, technological innovation, and factor allocation. Future efforts should prioritize raw material substitution, clean processes, and circular utilization to enhance input efficiency. (3) The non-ferrous metal smelting and rolling industry maintains generally high efficiency; however, the radar chart indicates sensitivity to input structure, suggesting that optimizing the match between capital and labor is critical to prevent efficiency decline during transformation.

In summary, under the dual-carbon constraints, significant inter-industry differences in green transformation efficiency exist within Jiangsu's manufacturing sector. The chemical industry remains a bottleneck and should be a priority for policy support and technological innovation, while the steel and non-ferrous metal sectors, despite high efficiency, still need to explore pathways for deeper decarbonization.

## 5. Conclusions and Recommendations

### 5.1 Conclusions

Based on DEA (input-oriented, with assets and average employment as inputs and operating revenue as output) empirical measurements for 2023 cross-sectional data of three representative high-energy-consuming industries in Jiangsu Province—namely, chemical raw materials and chemical products manufacturing, ferrous metal smelting

and rolling, and non-ferrous metal smelting and rolling—the main conclusions of this study are as follows:

**Significant inter-industry efficiency differences.** Under the "two-input, one-output" framework, ferrous and non-ferrous metal smelting and rolling industries are located on the DEA frontier in both CCR and BCC models ($\theta = 1$), indicating a relatively balanced combination of capital and labor inputs and output generation, with no significant input redundancy. In contrast, the chemical industry exhibits significantly lower efficiency (CCR $\theta \approx 0.561$, BCC $\theta \approx 0.569$), suggesting substantial input redundancy or output insufficiency. From an input-oriented perspective, the industry could reduce overall inputs by approximately 43.9% to reach the sample frontier.

**Low efficiency is not primarily caused by scale issues.** The minimal difference between CCR and BCC efficiency values in the chemical industry indicates scale efficiency is close to 1; thus, returns to scale are not the main driver of its inefficiency. This implies that the industry's low efficiency mainly stems from technical, process, or managerial shortcomings rather than simple mismatches in production capacity.

**Sensitivity to input specification varies across industries.** Robustness checks using only average employment as input show that ferrous metals maintain frontier efficiency ($\theta = 1$) from a labor perspective; chemical industry efficiency further declines ($\theta \approx 0.511$), highlighting its disadvantage under labor-intensive conditions; non-ferrous metals see a significant drop in efficiency (from 1.000 to 0.7845), indicating strong dependence on the capital–labor combination.

**Policy and technological pathways require differentiation.** The three industries exhibit significant heterogeneity in green transformation performance and constraint mechanisms. The chemical industry should prioritize technological upgrades and process optimization, focusing on managerial and process innovation. Ferrous and non-ferrous metals, despite overall high efficiency, still need to pursue deep decarbonization technologies and optimize input structures to avoid the "high-efficiency but high-carbon" trap.

In summary, under the dual-carbon targets, Jiangsu's manufacturing sector is not uniformly deficient: some industries have achieved relatively reasonable input-output configurations, while others (notably the chemical industry) face significant efficiency gaps, requiring coordinated efforts in technology, management, finance, and policy.

### 5.2 Recommendations

Based on the above conclusions, the following recommendations are proposed from multiple perspectives, including government, industry associations, enterprises, financial mechanisms, and research institutions.

**Government level:** Implement differentiated policy mixes to avoid "one-size-fits-all" management. For the chemical industry, provide fiscal subsidies, tax incentives, and green funds to support process upgrades and green technology adoption. For the steel and non-ferrous metal sectors, promote demonstrations of deep decarbonization technologies such as hydrogen metallurgy, electric furnace substitution, and CCUS to

maintain both efficiency and emission reduction. Additionally, improve green regulation and performance assessment systems by incorporating carbon intensity and energy consumption into evaluation metrics, linking them with fiscal support and credit conditions to form dynamic incentives. Cross-regional industrial collaboration and industrial park energy complementarity can further enhance systemic resource utilization efficiency.

**Industry and association level:** Develop low-carbon roadmaps specifying short-, medium-, and long-term green transformation targets, and promote experience replication through standardization and demonstration projects. Establish collaborative platforms for industrial chain coordination and green process demonstration, particularly in the chemical industry to strengthen raw material substitution and circular utilization. Enhance management and frontline workforce green production capabilities through vocational training and knowledge dissemination.

**Enterprise level:** Chemical industry firms should prioritize energy efficiency improvement and process optimization, conduct energy audits, and implement ISO 50001 energy management systems. Accelerate the adoption of green raw materials, by-product recycling, and clean processes to reduce input waste and emission intensity. Non-ferrous metal firms should optimize capital–labor matching through digitalization, automation, and intelligent manufacturing to prevent efficiency decline due to factor misallocation. Steel and non-ferrous metal enterprises should invest in deep decarbonization technologies and low-carbon pilot projects to avoid path dependence of "high efficiency but high carbon."

**Financial and market mechanisms:** Use green credit, green bonds, and carbon finance products to lower transformation costs, and link credit and insurance mechanisms to energy efficiency and emission reduction performance to guide resource allocation. Carbon markets should further improve price discovery, provide clear economic incentives for emission reduction, and implement transitional arrangements to buffer short-term shocks.

### 5.3 Research Limitations and Future Directions

Although the findings of this study are informative, several limitations exist:

The indicator system is incomplete, omitting undesirable outputs such as energy consumption and carbon emissions. Future research could apply Malmquist indices or similar methods to study the dynamic evolution of carbon efficiency.

The study focuses on the industry level and does not cover heterogeneity at the enterprise or sub-industry level. Future research could use more granular data to enhance DEA discriminative power and provide more precise policy recommendations.

This study is based on static cross-sectional analysis. Future work could integrate policy shocks and market factors, employing quasi-experimental methods to identify causal effects of different policy instruments on green transformation efficiency.

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# Game Theory Perspective of Sino-US Relations: Complex Intertwining of Cooperation and Competition

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**ABSTRACT**

As one of the most important bilateral relations in the world, Sino-US relations present a complicated situation of co-existence of cooperation and competition. Using the analytical framework of game theory, this paper deeply discusses the interaction between China and the United States in economic, political, military, scientific and technological fields. Through the classic model of game theory, this paper analyzes the motives and results of strategic choice between the two countries in different situations. It is found that although there are many interests differences and competitions between China and the United States, under the impetus of global public affairs, economic interdependence and other factors, cooperation is still the best solution in line with the long-term interests of both sides. Finally, the paper puts forward some policy suggestions based on game theory for the construction of healthy and stable bilateral relations between China and the United States.

## 1. The concept of game theory and its analytical framework

In today's era of globalization, game theory provides a unique and profound perspective to analyze international relations, especially the interaction mode between big countries. As the two largest economies in the world, the relationship between China and the United States undoubtedly has a far-reaching impact on the global political, economic and security pattern. In recent years, with the rapid improvement of China's comprehensive national strength and the increasing international influence, the interaction between China and the United States in the fields of economy, politics,


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military affairs, science and technology has become more frequent and complicated. There are competitive factors such as trade frictions and geopolitical games, and there is also room for cooperation in dealing with global challenges such as climate change and global public health crisis. Sino-US relations have entered a new and more complicated stage, and the core feature of this relationship can be described by the mode of "cooperation and competition coexist" in game theory. This not only reflects the intertwined interests of the two countries in key areas, but also reveals the complexity and multidimensional nature of cooperation and competition among major powers under the current international system.

The core research content of game theory is that in an interactive situation involving at least two participants, each participant formulates and implements corresponding strategies according to his own expectations of other participants' behaviors and the goal of maximizing his own interests, and finally forms an interactive equilibrium state based on conflict and cooperation. In the game process, it includes key elements such as participants, strategy sets and revenue functions. Participants are the actors who participate in the game. In the game scene of Sino-US relations, China and the United States are the main participants. Strategy set refers to the set of all action plans that each participant can choose in the game. For example, in the field of trade, the strategies that China and the United States can choose include lowering tariffs, raising tariffs, setting trade barriers, and negotiating free trade agreements. The income function defines the income of each participant under different strategy combinations, which is an important basis for participants to choose strategies. Game theory can be divided into many types according to different classification standards, such as one-time game and repeated game according to the number of games; According to the participants' mastery of information, it can be divided into complete information game and incomplete information game; According to whether the participants can reach a binding agreement, it can be divided into cooperative games and non-cooperative games. Different types of games have their own unique characteristics and analysis methods, which are suitable for explaining the interactive behavior of Sino-US relations in different situations.

Game theory, as a theory to study rational decision-making behavior, provides an important analytical tool to explain and predict the interaction between China and the United States in different fields and situations. This analysis is of great significance in understanding how the two countries maintain and develop bilateral relations while pursuing their respective national interests. The interaction between China and the United States presents classic models in game theory, such as prisoner's dilemma and non-zero-sum game. These models reveal the delicate balance between cooperation and competition, and how to influence the decisions and actions of both sides through strategic interaction. The prisoner's dilemma is particularly evident in Sino-US relations. In key areas such as trade, network security and technological innovation, both sides may face a choice: to pursue the greatest interests unilaterally at the expense of cooperation, or to seek a win-win cooperation plan. In this situation, the decision-making of both sides is strongly influenced by the behavior of the other side, and often leads to suspicion and confrontation because of uncertainty about the

intention of the other side.

However, Sino-US relations are not a pure zero-sum game. In many aspects, such as climate change, global health, anti-terrorism and other issues, both sides have the motivation and demand for cooperation. These are typical non-zero-sum game scenarios, in which cooperation between the two sides can bring common interests, while confrontation may lead to a lose-lose result. Therefore, to analyze Sino-US relations from the perspective of game theory, we need to consider this dynamic and multi-level interaction mode. Whether China and the United States can effectively manage their differences and establish a more stable cooperation mechanism depends not only on their respective domestic policies and international strategies, but also on their strategic choices and mutual adaptability in the game process. This complex game relationship is not only related to the future of China and the United States, but also will profoundly affect global stability and prosperity.

When analyzing this relationship, we should not only pay attention to the current competitive situation, but also deeply discuss how China and the United States can shape each other's policies and strategies through games in the context of increasingly close global ties. This requires us to comprehensively consider the historical, political, economic and cultural aspects, in order to understand and predict the complex and dynamic relationship between these two great powers more comprehensively. Next, we will analyze the relationship between the two countries from the perspective of game theory from the perspectives of economy, military and science and technology (He，2021).

## 2.Characteristics of Sino-US Relations as Game Scenes

### 2.1 The strength and influence of the participants

Both China and the United States occupy a pivotal position in the global political and economic arena. From the economic perspective, the two countries are the top two economies in the world. In 2024, China's total GDP reached US$ 20.5 trillion, accounting for about 20% of the global GDP, while the United States' total GDP was US$ 27.4 trillion, accounting for about 27% of the global GDP. The bilateral trade volume was as high as US$ 700 billion, and the stock of mutual investment exceeded US$ 240 billion. The interdependence between China and the United States was extremely high, and any adjustment of economic policies would have a significant impact on the global economy. In the political field, the United States is a permanent member of the UN Security Council, which has long dominated the international political order, and has an extensive ally system and a strong voice in international affairs. In recent years, China's influence in the international political arena is also increasing day by day, actively promoting the development of multilateralism, advocating the building of a community of human destiny, and playing an increasingly important role in international peacekeeping, humanitarian relief and other affairs. Militarily, China and the United States are both military powers, with advanced weapons and huge military strength, and military confrontation and

cooperation coexist. This powerful strength and extensive influence make China and the United States become decisive key participants in the game of bilateral relations, and every strategic decision of both sides may trigger a chain reaction on a global scale.

### 2.2 Diversity and complexity of interest demands

The interests of China and the United States are highly diverse and complex. In the economic field, the United States expects to protect its domestic traditional industries, such as manufacturing and agriculture, through trade policies, while maintaining its global leading position in high-tech industries, such as semiconductors, artificial intelligence and biomedicine, and ensuring high profits brought by technology monopoly; China is committed to promoting industrial upgrading, expanding the export market, enhancing its position in the global industrial chain and value chain, realizing high-quality and sustainable economic development, and at the same time, ensuring domestic people's livelihood needs and improving people's living standards. On the political level, the United States tries to maintain its global hegemonic position, promote its democratic values and political system, has prejudice and misunderstanding about China's political system, and tries to curb China's development by means of political interference and public opinion smearing. China firmly safeguards national sovereignty, security and development interests, advocates the democratization of international relations, and promotes the construction of a fairer and more rational new international political order. In terms of culture, the United States relies on its powerful cultural industries, such as Hollywood movies, pop music, social media, etc., to export culture around the world and try to shape the global cultural discourse right; China strives to inherit and carry forward China's excellent traditional culture, push Chinese culture to the world, and enhance the country's cultural soft power. In addition, in the field of global public affairs, such as climate change, public health and security, anti-terrorism, etc., China and the United States have both cooperative needs to jointly meet global challenges and competitive relations in cooperation dominance and resource allocation. This diverse and complex interest demand makes the game of Sino-US relations full of variables and uncertainties. (Zhang,2019）

### 2.3 Information asymmetry and strategic uncertainty

In the game of Sino-US relations, information asymmetry and strategic uncertainty are two notable features. Information asymmetry is reflected in many aspects. For example, in the military field, information such as military strategy, research and development progress of weapons and equipment, and military deployment between China and the United States are often highly confidential, and it is difficult for both sides to fully grasp each other's true military intentions and capabilities. In the field of science and technology, the United States keeps its high-end technology research and development plan, technology patent layout and other information strictly confidential,

while China also keeps certain information closed on the research and development of some key core technologies to protect its own technological innovation achievements and industrial safety. In terms of political decision-making, the domestic political forces in the United States are complicated, and different political factions and interest groups have different attitudes and policy propositions towards China. It is difficult for China to accurately predict the direction of the US government's China policy. China's political decision-making process and policy adjustment are based on its own national conditions and development needs, and the United States often has misunderstandings due to lack of in-depth understanding. This kind of information asymmetry leads both sides to make strategic decisions based on limited information and subjective judgment, which increases the risk of strategic misjudgment. Strategic uncertainty stems from the changes in interests of China and the United States in different fields and the dynamic evolution of the international situation. With the rapid development of China's economy and the improvement of its comprehensive national strength, its role and influence in international affairs are constantly expanding. The United States has doubts about China's future development direction and strategic intention, and is worried that China will challenge its global hegemony. It is also difficult for China to accurately grasp the strategic bottom line of the United States in containing China's development and when and how to adjust its China policy. Changes in the international situation, such as the adjustment of the global economic structure, the outbreak of regional conflicts, and the breakthrough of emerging technologies, will also have an impact on the strategic decisions of China and the United States, further aggravating strategic uncertainty and making the game of Sino-US relations more complicated and changeable.（Zhang，2022）

## 3. Game analysis between China and the United States in different fields

### 3.1 Economic field:

In the economic field, the game between China and the United States presents a complex interactive model. According to game theory, this relationship can be regarded as "repeated game". In this model, China and the United States constantly adjust their strategies in multiple rounds of games, taking into account both immediate interests and long-term relations. Focus on trade, investment, technological innovation and market access.

Trade is the core of the economic game between China and the United States. In pursuit of trade balance, the United States has repeatedly imposed high tariffs on China's goods, trying to reduce the trade deficit and protect its own industries in this way. China, on the other hand, adjusted its export structure and increased its imports of agricultural products and other commodities to the United States to reduce the trade imbalance. This trade game embodies the characteristics of "prisoner's dilemma", and it is difficult for both sides to reach the optimal state at the same time in a short period of time, so they need to seek long-term cooperation and compromise; In terms of investment, the United States has restricted its investment in China in some key areas,

and for national security reasons, it has restricted China enterprises from investing in the United States for mergers and acquisitions, especially in high-tech fields. China, on the other hand, used market access as a bargaining chip, demanding foreign-funded enterprises to share technology, which caused resentment in the United States. The investment game embodies the "threat game in game theory", in which both sides try to influence each other's decision-making by demonstrating their own abilities and wishes; Technological innovation is the new focus of the game. The United States tries to maintain its technological superiority by restricting the sales of products from China technology companies such as Huawei in the US market. China, on the other hand, has increased its investment in R&D and strived to catch up in the fields of artificial intelligence and 5G. In this process, both sides realize the importance of technological advantages for economic development and constantly adjust their strategies to gain competitive advantages; Market access is also a key point. The United States complains about the restrictions on foreign-funded enterprises in the China market, while China accuses the United States of unfair trade practices. Both countries use market access as bargaining chips to try to seek greater economic benefits.

The game between China and the United States in the economic field is long-term and complicated, involving multiple levels of interaction. The highly complementary economies of the two countries make it impossible for both sides to completely decouple, which requires both sides to find a balance between cooperation and competition.

### 3.2 Military field

The game in the military field is an important aspect in Sino-US relations. According to game theory, this can be regarded as a "zero-sum game", in which the gains of one party often mean the losses of the other party.（Liu，2015).

The United States has always been the leader of global military power, with the most powerful army and the most advanced military technology in the world. However, with the acceleration of China's military modernization, the United States began to feel pressure. China's military modernization includes improving the quality and quantity of its nuclear arsenal, developing its cyber warfare capability and strengthening its naval forces, all of which have challenged the military superiority of the United States to some extent. In the Asia-Pacific region, the military game between the two countries is particularly obvious. The United States maintains its influence by strengthening its military presence in the region, such as through military bases and joint military exercises. At the same time, China has strengthened its control over the South China Sea by strengthening its military deployment; The military game between China and the United States also includes the game of arms control. Although both countries have participated in multilateral arms control negotiations, they still have major differences on some key issues, such as missile defense system and space weapons. These games often involve complex strategic calculations and mutual trust issues; Information warfare and cyber warfare are also

emerging game fields. In this field, both sides are striving to improve their capabilities and try to influence each other's military and civilian facilities through cyberspace.

The game between China and the United States in the military field is complex and changeable, involving the traditional balance of power, as well as emerging technical and strategic fields. This game has a far-reaching impact on bilateral relations and even global security.

### 3.3 Science and technology

The field of science and technology is another key battlefield of the game between China and the United States. In this field, game theory can help us understand the interaction between the two sides in technological innovation and intellectual property rights.

The United States has long been a global leader in scientific and technological innovation, but in recent years, China has made remarkable progress in some scientific and technological fields, especially in artificial intelligence, 5G, quantum computing and renewable energy. This technological catch-up has challenged the leading position of the United States to some extent. In the game of science and technology, intellectual property has become a key issue. The United States accuses China of stealing its intellectual property rights and technology, while China thinks that the United States is too harsh on this issue, which restricts normal technical exchanges and cooperation. This dispute reflects the conflict of interests between the two sides in the field of science and technology; On the other hand, both Chinese and American governments are actively investing in scientific research and development to improve their innovation ability. This includes providing financial support at the national level, formulating favorable policies and establishing innovation platforms. This kind of competition is not only carried out at the national level, but also penetrated into the private sector, such as the global R&D investment and innovation activities of large technology companies; The game of science and technology under the background of globalization also involves the competition of technical standards. For example, in the aspect of 5G communication technology, China enterprises such as Huawei promote their technical standards on a global scale, while the United States tries to promote different technical standards to maintain its influence in the global communication network.

In the game in the field of science and technology, both sides are trying to gain an advantage by improving their technological capabilities. This includes not only developing new technologies, but also implementing influence strategies on a global scale, such as influencing the adoption of certain technologies by other countries through foreign and trade policies. At the same time, the two countries are also trying to attract and train top scientific and technological talents to support their vision of scientific and technological innovation (Gala，2023).

Sino-US relations have always been one of the most complicated and striking relationships in the international political and economic fields. Under the background of globalization, China and the United States have both competition and cooperation

in economy, security, science and technology. For example, in the economic field, China and the United States are both major economies in the world, and the trade and investment relations between the two countries are complicated. From the perspective of game theory, this relationship can be regarded as a kind of "prisoner's dilemma", that is, if both sides adopt cooperative strategy, they will gain more benefits on the whole, but due to the lack of trust and the temptation of short-term interests, both sides tend to choose non-cooperative strategy, which leads to a lose-lose situation. The trade war initiated by the United States against China and China's countermeasures are all manifestations of this prisoner's dilemma; The security field is more complicated. The strategic competition between China and the United States in the Asia-Pacific region, such as the South China Sea and the Taiwan Province issue, constitutes another kind of game. In this game, both sides try to improve their bargaining power by showing their military strength and establishing alliances. However, due to the existence of nuclear weapons, this game is also a "dove game", that is, both sides understand that direct military conflict will lead to disastrous consequences, so despite the pressure on the edge, they all try to avoid the direct outbreak of conflict; In the fields of global governance, such as climate change and public health, China and the United States present more possibilities for cooperation. These fields are characterized by "non-zero-sum game", that is, the results of cooperation can benefit both sides, while confrontation will lead to mutual losses. In dealing with global challenges, Sino-US cooperation is not only beneficial to both sides, but also the expectation of the international community.

However, even if there is potential for cooperation in these areas, the interaction between the two sides is affected by mutual strategic doubts. This mutual suspicion stems from the realistic logic of international politics, that is, countries always consider their own security and interests first. The technological competition between China and the United States, especially in high-tech fields, such as 5G and artificial intelligence, is a reflection of this mutual suspicion. In this kind of competition, both sides try to ensure their dominant position in key technical fields to protect their own security and economic interests.

Generally speaking, Sino-US relations are a complicated relationship of "cooperation and competition coexist". In different fields and at different time points, this relationship presents different characteristics. From the perspective of game theory, this relationship has the characteristics of both prisoner's dilemma and non-zero-sum game. The future development of Sino-US relations will depend on whether the two countries can effectively manage differences, enhance mutual trust and find more space for cooperation, which is not only related to the interests of China and the United States, but also to the stability and prosperity of the entire international community.

## Conflict of interests

The author has no conflicts of interest to report.

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# Between Institutional Marginalization and Identity Reconfiguration: The Impact of Indonesia's Political Transformation on Chinese Indonesian Political Identity

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ABSTRACT

As one of Southeast Asia's largest archipelagic nations, Indonesia's multicultural social fabric plays a crucial role in its development. This paper examines how changes in Indonesia ' s political system have impacted the political identity of the Chinese community, focusing on institutional marginalization and identity reconfiguration. Despite longstanding marginalization in political, cultural, and social spheres, the post-1998 democratization reforms gradually expanded opportunities for Chinese political participation. Using a historical institutionalism framework, this study analyzes the evolution of Chinese political identity — from ambiguous status in the independence era, through assimilation under Suharto ' s New Order, to gradual reconfiguration during democratization. It also discusses adaptive strategies such as political apathy, economic adaptation, and community-based identity spaces. Despite progress, challenges persist due to religious nationalism, socio-psychological barriers, and institutional constraints. Future reforms should prioritize reducing implicit discrimination and enhancing social integration to foster political equality and identity reconstruction.

## I. Introduction

Indonesia, the world's fourth most populous country, possesses rich ethnic and cultural diversity. As a multi-ethnic nation, Indonesia's ethnic relations have long been challenging, particularly for the Chinese community. Throughout Indonesian history, the Chinese have undergone a complex process of identity formation, where their


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political participation and social status have often been impacted by institutional exclusion and social prejudice. Indonesia and China are separated by sea, with a history of interactions dating back to the early Han Dynasty. Scholars such as Li Xuemin suggest that organized Chinese immigration to Indonesia began as early as the late Tang and the Five Dynasties and Ten Kingdoms period. By the 12th to 13th centuries, a vibrant overseas Chinese society had initially taken shape in Indonesia. In the early 20th century, the Chinese population in Indonesia numbered 220,000, growing to 1.23 million by 1930. During the ethnic census conducted by the Indonesian government in the 1960s, the Chinese population reached 2 million. Current figures for the Chinese Indonesian population remain highly disputed, with estimates from various government departments, institutions, and scholars ranging widely from 2.41 million to 30 million (Li,2005). This significant discrepancy in numbers itself reflects the complexity of Chinese Indonesian identity. The Chinese community in Indonesia has experienced numerous challenges and adaptations throughout history. From a relatively elevated status during the colonial period, to the cultural assimilation policies of the New Order era, and further to the social crisis of 1998, the transformation of the Chinese identity within Indonesian society has been a complex and intricate journey.

This paper aims to examine the profound impact of changes in Indonesia's political system on the political identity of the Chinese community. Utilizing the perspective of historical institutionalism, combined with theories of political identity, identity reconfiguration, and the concept of institutional marginalization, it analyzes the evolution of the Chinese community's identity amidst Indonesia's political institutional transformations. The study focuses particularly on the gradual transition of the Chinese community's political identity from the early years of Indonesian independence to the post-democratic reform era, as well as the challenges and opportunities encountered throughout this process. It is hoped that this research will provide a valuable theoretical framework and practical insights for understanding the reconstruction of political identity among ethnic minorities in multi-ethnic nations globally.

## II. Historical Changes in Indonesia's Political System and the Evolution of Policies Towards the Chinese Community

(1) Early Independence Period (1945-1965)

Indonesia formally declared independence in 1945, entering a complex phase of nation-building. The nascent post-independence regime sought to construct a unified national identity within a multi-ethnic society(Zheng,1991). However, the Chinese community, as one of Indonesia's principal ethnic minorities, encountered ambiguous identity status and institutional exclusion during this process.

During the Dutch colonial era, the Chinese community enjoyed relatively

privileged economic status, occupying significant roles as merchants and capitalists within the Indonesian economy. The Dutch colonial administration established specific social hierarchies and trade networks that elevated the economic standing of the Chinese while simultaneously deepening divisions with indigenous Indonesian groups. Following independence, the Indonesian government faced the challenge of addressing the "Chinese question" within its nation-building project(Huang,1988). Given the historically complex relationship between the Chinese and indigenous populations, many Indonesian nationalists viewed the Chinese as "outsiders" who should not be integrated into the new nation. Within this context, the government implemented various policies, including naturalization measures requiring the Chinese to choose between Indonesian citizenship or retaining foreign nationality. The 1958 Citizenship Law mandated this choice, gradually diminishing the political presence and participation of the Chinese community through enforced identity categorization. During this period, the citizenship status of the Chinese was often operationally constrained; the government not only legally obscured the position of Chinese citizens but also excluded many from electoral and political processes in practice(Long,2013). At this stage, the Chinese community struggled to fully integrate into mainstream Indonesian society while facing systematic marginalization within institutional structures.

Although the government verbally advocated equal treatment for all citizens, its practical implementation was marked by discrimination and restrictions against the Chinese community. By limiting Chinese political participation, the government aimed to consolidate the unity of the "Indonesian nation." These policies fostered strong resentment among the Chinese while exacerbating tensions between them and indigenous Indonesians. Due to the suppression of their political engagement, the identity of the Chinese community remained highly unstable during this period, and their marginalization within the national political system became increasingly entrenched.

(2) Suharto's New Order Period (1966-1998)

Following the "September 30th Movement" incident in 1965, Suharto ascended to power and established an authoritarian "New Order" regime, marking a new phase in Indonesia's political system. During this period, the Suharto government implemented a series of stringent "de-Sinification" policies that further suppressed the political presence of the Chinese community. These policies, rooted in nationalism, intensified the political and cultural exclusion of the Chinese. In 1967, the government enacted multiple measures aimed at diminishing Chinese cultural influence, including the prohibition of Chinese-language schools and media, mandatory adoption of Indonesian names(Yang,2003), and the comprehensive promotion of assimilation policies. These actions led to profound suppression of Chinese culture and language, severely challenging the cultural identity of the Chinese community. Simultaneously, the government imposed restrictive economic policies targeting the Chinese, limiting

their development in business, education, and other social spheres. The distinctive status of the Chinese in enterprise and social activities was undermined, with many Chinese-owned businesses forced to transfer ownership or subjected to stringent government controls.

Through these "de-Sinification" policies, the New Order regime not repressed the cultural identity of the Chinese community but also stripped them of political participation rights. During this era, the identity of the Chinese was not only marginalized but also politically stigmatized. By labeling the Chinese as "affluent yet unpatriotic," the government reinforced their negative societal image. This stigmatization exacerbated tensions between the Chinese and indigenous Indonesian groups. Faced with such a high-pressure political environment, most Chinese adopted strategies of "political apathy" and "depoliticization." Many chose to withdraw from the political arena, redirecting their efforts toward economic activities and private enterprise development to avoid potential political conflicts. Due to prolonged political suppression, the political identity of the Chinese community largely receded into obscurity, leaving them with no meaningful place in national politics (Zhang, 2017).

(3) Period of Democratization Reform (1998–Present)

The collapse of the Suharto regime in 1998 marked Indonesia's entry into a new phase of political openness. The democratization reforms provided the Chinese community with unprecedented opportunities for political participation. The gradual liberalization of the political environment, particularly through electoral reforms and the legitimization of ethnic minority cultures, granted the Chinese community greater political rights. In 2000, the Indonesian government abolished restrictions on Chinese cultural expressions, and in 2002, designated the Lunar New Year as a public holiday, signifying state-level recognition of the Chinese community's cultural identity. These changes not only bolstered the community's cultural confidence but also catalyzed profound shifts in its political identity.

The advancement of democratic electoral systems significantly enhanced the political engagement of the Chinese community. Representative figures from the community began to enter the political arena, participating in policy-making and public affairs. The election of Basuki Tjahaja Purnama (Ahok) as Governor of Jakarta marked a major political breakthrough for the Chinese community. His success not reflected the growing political representation of Chinese Indonesians in the democratic process but also indicated a gradual reconfiguration of their political identity. Nevertheless, despite expanded opportunities for political involvement, Chinese politicians continued to face substantial pressure from nationalist and religious conservative forces. During his political career, Ahok encountered significant controversy related to religious issues, particularly in the highly publicized blasphemy case, which exposed the continued fragility and instability of Chinese

political identity. Although democratization created institutional opportunities for political engagement, the reconstruction of the Chinese community's political identity remains fraught with challenges. The resurgence of nationalist sentiments, the influence of religious politics, and persistent historical prejudices against the Chinese continue to impede full integration of their political identity into mainstream society. Together, these factors ensure that the evolution of the Chinese community's political identity involves not only institutional changes but also ongoing socio-psychological struggles.

The historical transformations of Indonesia's political system have profoundly shaped the political identity of the Chinese community. From the ambiguous status of the early independence period and the repressive policies of the Suharto era to the ongoing identity reconfiguration in the post-reform period, the Chinese community's political identity has undergone a long transition from marginalization toward gradual acceptance. Although the political system has increasingly incorporated the Chinese community, socio-cultural barriers persist, and their political identity continues to face significant challenges. This process underscores the crucial role of political institutions in shaping minority identity formation, as well as the complex interplay of opportunities and challenges brought about by political openness.

## III. Characteristics of Chinese Political Identity under Institutional Marginalization

(1) Marginalized Characteristics of Political Identity

Since the founding of Indonesia, the Chinese Indonesian community has long occupied the periphery of the country's political system. Even today, they have yet to fully integrate into the mainstream national and ethnic identity framework of Indonesian society. Historically, the Indonesian government implemented a series of policies that excluded the Chinese community from the center of national political life. Whether during the colonial era or after independence, the Chinese have consistently been perceived as "outsiders" and subjected to institutional exclusion. This exclusion directly resulted in the long-term weakening of their political identity, gradually cementing its marginalized characteristics.

Institutional exclusionary policies enforced by the Indonesian government included, but were not limited to, restrictions on identity documentation, property registration, and cultural expression for the Chinese community. From the early to mid-20th century, the government not only denied the Chinese political rights equal to those of indigenous Indonesians but also significantly limited their opportunities for political participation through various legal mechanisms. The 1958 Citizenship Law, which required the Chinese to choose between naturalization or retaining foreign nationality, indirectly diminished their presence within Indonesia's political system. Even in the economic sphere, the influence and wealth accumulated by the Chinese

through economic activities failed to translate into corresponding political voice or social acceptance.

Although Indonesia's political system has gradually opened up in recent decades, the political identity of the Chinese community remains fragile. While they aspire to integrate into mainstream society and obtain political rights equal to other ethnic groups, they continue to face nationalist sentiments and societal rejection. Deep-seated stereotypes persist in Indonesian society, characterizing the Chinese as economically dominant yet politically disloyal. These perceptions further exacerbate interethnic tensions and reinforce the identity dilemma of the Chinese community.

The "otherness" of the Chinese community stems not only from external institutional exclusion but is also deeply rooted in socio-cultural dynamics. This dimension of marginalization extends beyond the lack of political rights to include the blurring and erosion of cultural identity. Within Indonesia's majority-dominated national identity framework, the cultural identity of the Chinese community is often viewed as incomplete or even entirely excluded from the conception of Indonesian national identity. This cultural marginalization intensifies the sense of isolation experienced by the Chinese in expressing their cultural identity, while also contributing to their lack of belonging in the realm of political identity.

(2) Coping Strategies of the Chinese Community

Faced with political marginalization and social exclusion, the Chinese Indonesian community has adopted various coping strategies to counteract unfair institutional and societal pressures. These strategies typically manifest as political apathy, depoliticization, and the pursuit of alternative spaces for identity expression. Particularly during the New Order regime, the Chinese widely opted to distance themselves from politics, avoiding participation in political activities that could trigger social conflict. Over the past decades, the community has primarily sought survival and identity preservation within the economic and cultural spheres, especially through business and education. This approach has somewhat alleviated political oppression while providing a stable social foundation and economic security for the Chinese.

Due to severe restrictions on political expression, many Chinese have focused their energies on economic development and commercial activities. By operating family businesses, the community has not only secured economic stability for itself but also created spaces for social interaction and cultural preservation. While this economic survival strategy has been effective, it has also reinforced negative stereotypes within Indonesian society regarding Chinese economic dominance, further fueling anti-Chinese sentiment. The success of Chinese businesses is often interpreted as "capitalist oppression," cementing their label as "foreign elites."

As the political environment gradually opened up, Chinese community organizations began to play a significant role in Indonesian society. Active participation in social welfare, educational philanthropy, and charitable initiatives by these organizations has not only fostered collective identity and cultural belonging among the Chinese but also promoted communication and interaction with other ethnic groups. Through public cultural events and charitable donations, Chinese associations have gradually shed their previously "invisible" social status and begun to express their identity in the public sphere.

Despite providing avenues for survival and identity expression, these strategies have also limited the Chinese community's further engagement in the political domain. Many Chinese remain cautious about political participation, perceiving it as high-risk due to the potential for social conflict and identity-based controversy. The persistent societal rejection of the Chinese political identity has led the community to prioritize seeking influence in the economic rather than the political arena.

## IV. Changes in Chinese Political Identity After Political Opening

(1) The Rise of Multiple Identities and Identity Differentiation

With the gradual opening of Indonesia's political system, the political identity of the Chinese community has undergone significant changes. Particularly among the younger generation, identity expression has become more diverse and individualized. This shift not only reflects changes in the political environment but also reveals the complex relationship between ethnic identity and national identity. Against the backdrop of political liberalization, the identity of the Chinese Indonesian community has experienced profound differentiation. Traditional Chinese Indonesians often identify primarily as "Indonesian citizens," consciously downplaying their Chinese characteristics. This identity strategy stems largely from concerns about social exclusion. The older generation emphasizes integration into Indonesian society, seeking social and political acceptance by strengthening their identity as Indonesian nationals. The formation of this strategy is closely tied to Indonesia's historical political context, particularly under political repression and ethnic discrimination, where the Chinese community—whether consciously or unconsciously—suppressed their cultural traits to avoid provoking social discontent or conflict.

In contrast, the younger generation exhibits a stronger sense of self-identity and emphasizes their dual identity as "Chinese Indonesians." Unlike their predecessors, young Chinese Indonesians actively express their ethnic identity through platforms such as social media and cultural activities, asserting that their "Chineseness" should not only be respected but also recognized as an integral part of Indonesia's multicultural society. They no longer view their Chinese identity as a burden but rather as a source of cultural pride, displayed openly in the public sphere. This transformation reflects the younger generation's increasingly positive

self-identification in the context of globalization and cultural pluralism(Wang,2023).

However, this internal differentiation within the Chinese community has also generated certain conflicts and challenges. Some traditional Chinese view the younger generation's emphasis on ethnic identity as potentially exacerbating tensions with indigenous Indonesians and even provoking ethnic conflict. The confident expression and cultural assertiveness of the youth are often perceived by older generations as "radical," fearing that such actions may invite further exclusion and negative perceptions of the Chinese community. This divergence in identity perspectives highlights the tension between ethnic identity and national identity. On one hand, the Chinese community seeks to establish its place within cultural diversity; on the other, it strives to integrate into mainstream society and achieve harmonious coexistence with indigenous groups.

Balancing their "Chinese" identity with their "Indonesian" identity has become a critical challenge for the community in reconstructing its political identity. This is not only a cultural dilemma but also a political one. The question of how to harmonize ethnic identity with national identity and foster their coexistence remains a pressing issue for Chinese Indonesians to thoughtfully address.

Amid the gradually opening political environment, the identity expression of the Chinese community has shifted from passive adaptation to active assertion. In the cultural domain, Chinese associations actively shape their societal image through festivals, cultural exhibitions, and other activities. One of the most symbolic events was the official designation of the Lunar New Year as a public holiday, marking the Indonesian government's formal recognition of Chinese cultural identity. This move not only provided the Chinese community with an opportunity to showcase their culture but also signaled to Indonesian society that Chinese culture is an important component of the nation's multicultural fabric. By organizing cultural activities such as Lunar New Year celebrations, Chinese associations have begun proactively inviting other ethnic groups to participate, fostering cross-ethnic cultural interaction and identity building. This transformation extends beyond the cultural sphere into areas such as social welfare and political participation. The Chinese community has started to more directly articulate political demands, advocating for greater social resources and discursive power.

(2) The Challenge of Religious and Nationalist Revival

As the world's largest Muslim-majority country, Indonesia witnesses Islam playing a dominant role in social and cultural life, with religious faith crucially shaping national identity. The Chinese community exhibits diverse religious beliefs, including adherence to Islam, but a significant portion practices Buddhism and Christianity. This religious divergence, within Indonesia's multi-religious society, becomes a source of identity conflict between the Chinese community and indigenous religious

groups. Although the Indonesian constitution guarantees religious freedom, in socio-cultural practice, religious identity and national identity are often closely intertwined, creating specific religious expectations among certain ethnic groups. Many indigenous Indonesians, particularly Muslim communities, regard Islam as central to national identity in both social and political contexts. In contrast, the Chinese community, owing to their adherence to non-Islamic faiths such as Buddhism and Christianity, is frequently perceived as "religious others." This religious difference complicates their socio-cultural integration. In some regions, especially those with conservative religious views, the distinct religious practices of the Chinese often become grounds for their exclusion.

In recent years, the resurgence of religious conservatism and rising nationalist sentiments in Indonesia have further accentuated the divide between the religious beliefs of the Chinese community and the mainstream faith. The confluence of religious conservatism and nationalism has intensified religious prejudices against the Chinese, with their faith seen as incompatible with Indonesian national identity and even raising doubts about their loyalty to the nation. Some political figures and religious leaders have exploited these religious differences to exclusion and hostility toward the Chinese, exacerbating tensions between them and native Muslims. In local elections and public activities, Chinese candidates frequently face religious labeling, particularly in regions where religious conservatism prevails. Even when Chinese candidates propose policies aligned with public interests, their religious differences remain a magnified issue. They are often viewed as religious "outsiders" and sometimes suspected of questionable loyalty. This religious exclusion poses significant obstacles to the cultural identity and social integration of the Chinese community, especially when religious and nationalist forces combine, threatening their sense of identity.

Although the Indonesian constitution ensures religious freedom, conflicts between religious and cultural identities remain profound in reality. Religious difference constitutes one of the major social challenges for the Chinese community, particularly when religion intersects with national identity, making religious faith a "vulnerability" in their social acceptance. Therefore, addressing religious identity differences and achieving the integration of the Chinese community into mainstream society while respecting religious freedom present a formidable challenge.

(3) Historical Trauma and the Chinese Community’s Identity Dilemma

Historical trauma remains one of the profoundly painful aspects of identity for the Chinese Indonesian community, particularly the anti-communist massacres of 1965 and the violent riots of 1998. These historical events not only exacerbated ethnic tensions between the Chinese and indigenous Indonesians but also deeply influenced the political and national identity of the Chinese community.

In 1965, Indonesia witnessed anti-communist massacres in which the Chinese community became one of the primary targets. Due to historical associations between some Chinese and the Indonesian Communist Party, many were erroneously equated with communists. Although the majority of the Chinese community had no involvement in politics or communist activities, the political complexities of the time made them victims of violent purges. Many Chinese were killed, disappeared, or forced to flee, during which the community suffered severe devastation economically, culturally, and familially. This historical trauma not only instilled deep skepticism among the Chinese toward the Indonesian state but also widened the rift between them and other ethnic groups. The memory of these massacres remains largely unhealed, posing a significant obstacle to the Chinese community's efforts to build a shared identity with mainstream Indonesian society.

The 1998 economic crisis and political turmoil once again made the Chinese community victims of violent conflict. During the large-scale riots, particularly in Jakarta and other major cities, Chinese-owned shops, homes, and properties became primary targets of violence. Chinese businesses were looted and burned, while Chinese women and children faced sexual violence on the streets. These riots profoundly shaped the community's perception of national identity. Many Chinese endured immense psychological trauma, the legacy of which continues to deeply affect their sense of belonging. Although the government implemented some remedial measures post-violence, many Chinese have yet to fully overcome the shadow of this historical trauma. To this day, their feelings toward national identity and political loyalty remain complex and ambivalent.

These historical traumas have left the Chinese community confused and uneasy in shaping their Indonesian national identity. Despite a strong sense of belonging, the deep divide with mainstream society renders their national identity particularly fragile. In a multi-ethnic nation, the Chinese community must not only navigate interethnic contradictions but also grapple with the emotional and psychological pain inflicted by historical trauma. This trauma has become a significant hurdle to reconciliation between the Chinese and other Indonesian ethnic groups. Despite numerous political and institutional reforms over the decades, these historical issues persistently impact the social identity of the Chinese community.

To this day, many Chinese remain unable to fully move past these historical wounds, and this collective memory continues to influence their relationship with Indonesian society. The unhealed historical trauma imbues their national identity with uncertainty. Even amid modernization and globalization, the historical trauma of the Chinese community remains deeply embedded in their cultural memory, creating a profound chasm in their efforts to shape a national identity.

While the reconstruction of political identity among Chinese Indonesians has made some progress driven by institutional reforms and social changes, religious

differences, nationalist resurgence, and the far-reaching impact of historical trauma continue to pose severe challenges to their national identity formation. Religious disparities and cultural identity conflicts persistently trouble the community, while the wounds of historical events fill their political identity with complex emotions and uncertainty.

Against this backdrop, key questions for the future include how the Chinese Indonesian community can break through traditional religious and cultural prejudices, find its place within a multicultural framework, and build a deeper sense of identity with mainstream Indonesian society. Indonesia's political openness and ethnic integration offer opportunities for the Chinese community to integrate into mainstream society, yet the enduring influence of history and religious divisions remain major challenges. Through further institutional reforms, cultural inclusivity, and social integration, the political identity of the Chinese community may achieve more comprehensive reconstruction in the future.

## V. Conclusion

This study, focusing on Chinese Indonesians from a historical institutionalism perspective, examines the impact of changes in Indonesia's political system on the political identity of the Chinese community, with particular attention to the interactive mechanisms between institutional marginalization and identity reconfiguration. Through an in-depth analysis of institutional transformations during the early independence period, the New Order era, and the post-democratization phase, it is evident that the political identity of Chinese Indonesians has undergone a transition from institutional exclusion toward gradual institutional acceptance and identity reconstruction. However, this process has not achieved complete and thorough identity integration, as institutional and socio-psychological barriers persist for Chinese Indonesians.

The damage inflicted by long-term institutional discriminatory policies on the political identity of the Chinese community has been profound. Institutional marginalization not only deprived the Chinese of political participation rights but also severely weakened their sense of national belonging, prompting them to adopt self-preservation strategies such as political apathy and avoidance of political engagement. Relying on economic development and grassroots community networks, the Chinese community sought alternative spaces for identity to maintain ethnic cohesion. However, this strategy also yielded negative social consequences, further entrenching the negative perception of Chinese Indonesians as possessing "economic privilege" or being "foreign elites" within Indonesian society. This perpetuated political and social divisions, constraining the depth and breadth of the community's political participation.

Since the democratization reforms, institutional discrimination has somewhat

eased, and the space for political participation by the Chinese community has expanded significantly. The younger generation of Chinese Indonesians has demonstrated more proactive identity expression and political engagement, confidently showcasing their cultural characteristics and pursuing dual integration of cultural and national identity. While this trend of active expression positively contributes to the reconstruction of their political identity, it has also triggered intergenerational identity conflicts within the community. The older generation, shaped by historical memories and experiences of social exclusion, tends to advocate for cautious expression, fearing that the assertive display of identity by the youth may provoke societal backlash. Reconciling intergenerational differences in identity and fostering a more cohesive ethnic consensus remains a critical issue to address in the process of identity reconstruction.

Furthermore, the resurgence of religion and nationalism, along with the negative legacy of historical trauma, continues to pose severe challenges to the political identity of the Chinese community. The religious differences between the predominantly Muslim mainstream society and the Chinese community make it difficult for the latter to achieve full acceptance at the socio-cultural level. The tension between religious identity and national identity significantly restricts the political space available to the Chinese community. Simultaneously, historical violent events, such as the 1965 anti-communist massacres and the 1998 anti-Chinese riots, have profoundly impacted the community's trust in and identification with the nation. To this day, historical memories remain an invisible chasm between the Chinese and other ethnic groups in Indonesia, hindering smooth ethnic integration and the realization of political identity.

The conceptual framework of institutional marginalization, political identity, and identity reconfiguration employed in this study demonstrates strong explanatory power, effectively revealing the complex and dynamic relationship between changes in the political system and ethnic identity. When examining issues of ethnic identity, greater attention must be paid to the interaction between socio-psychological factors and institutional elements, avoiding simplistic attributions of identity changes to institutional policy adjustments alone. The reconstruction of identity is a comprehensive process involving historical, socio-psychological, and cultural factors, where institutional reforms are a necessary but insufficient condition.

Based on the above analysis, while continuing to promote institutional openness, the Indonesian government must also prioritize fostering socio-psychological and cultural inclusivity and acceptance, actively facilitating cross-ethnic communication and integration to reduce intergroup misunderstandings and hostility. Theoretically, future research should focus more on the mechanisms of political identity at the micro-level, particularly the long-term impact of individual and collective memory on identity formation. The reconstruction of political identity for Chinese Indonesians remains a challenging and protracted task, requiring not only ongoing government

policy efforts but also the collective commitment of the Chinese community and Indonesian society as a whole. Only through the dual effects of institutional openness and socio-psychological acceptance can genuine political and cultural integration between Chinese Indonesians and mainstream society be achieved.

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# On the Influence of Historical Factors on ASEAN Integration

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ABSTRACT

With the development of globalization and regionalism, the integration of ASEAN develops rapidly. In this paper, the object of study is ASEAN identity, which mainly explores the origin, inheritance, enhancement and prospect of ASEAN identity from the perspective of historical theory. Although the reality and future requires that ASEAN should become a community of destiny, its emotion derives from the past. The existence of object consciousness in Southeast Asia is closely related to people's subject cognition, and the cultural value of the historical consciousness reflected by the identity of the reality needs us to reflection and reorganization. Therefore, the cultural identity concept in the long historical period before the establishment of the ASEAN is an important aspect of the evolution of regional consciousness in Southeast Asia, especially the emergence of Southeast Asia countries and colonialist invasion enhance the complexity of the regional consciousness, the national identity, the suzerain identity and the sub-region consciousness interweave with each other, which has an important impact to the real identity.

The integration of the Association of Southeast Asian Nations (ASEAN) is a complex process, shaped by a multitude of historical factors. This section provides a detailed analysis of these factors and their impact on ASEAN integration.

## I. Ambiguous Identity Consciousness in Early Southeast Asian History


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Tracing the origins of identity, Southeast Asian myths functioned to strengthen ethnic identity and a sense of belonging, with elements of identity embedded within its primordial[1] historical consciousness. India primarily exerted ideological influence, while China impacted the region through geopolitics, together constituting distinctive regional characteristics in ancient Southeast Asia. Southeast Asians actively absorbed foreign cultures and localized them, selectively adapting external influences to suit their own needs and blending them with pre-existing beliefs. For instance, while Indian cosmological concepts and political organizations were adopted, the caste system was not. This capacity for localization formed the foundation of Southeast Asia's autonomous history and the source of sub-regional identities. A state system emerged in the pre-colonial period, creating a dialectical relationship between the state identity formed by early Southeast Asian states and sub-regional consciousness. Often, a sense of collective interest is manifested and strengthened under the threat of a common enemy. The arrival of Europeans in the 16th century began to imbue Southeast Asia with characteristics of a shared destiny. From the 19th century onwards, national identity intensified dramatically in both mainland and maritime Southeast Asian states, which recognized the real threat came from the West, not from within the region. This strengthening of national identity coincided with the awakening of a regional consciousness. After World War II, Southeast Asian history entered a new phase. The peoples of the region developed a new, comparative understanding of themselves, which significantly impacted Southeast Asian regional identity. Surveying Southeast Asian history prior to 1945, "Southeast Asian identity" was the result of the transmission and development of ideas and experiences. Although debates about the concept of "Southeast Asia" and its cultural homogeneity have persisted since the mid-20th century, the influence of historical consciousness on the value judgments inherent in the concept of Southeast Asian identity is undeniable. The evolution of identity concepts before 1945 was primarily a result of continuous processes of "othering" and "localization" under the influence of primordial historical consciousness, incorporating different propositions from various eras. The constructed

nature of identity dictates that while present and future exigencies require ASEAN to become a community of shared destiny, the awareness and sentiment of this shared destiny originate from the past. Given that cultural identity is characterized by transmissibility and experientiality, examining the origins and evolution of regional identity in Southeast Asia prior to ASEAN integration is essential.

The term "Southeast Asia" itself is an external label, a product of World War II, but this does not mean that a "regional concept" for the area only truly emerged in the 1940s. Prior to this, Southeast Asians already possessed some cognition of the features of this geographical area and politico-cultural entity, because identity is a historical product of societal continuous development. However, in stark contrast to the clear and tangible "European idea," the regional concept of "Southeast Asia" was ambiguous. Early Southeast Asian history refers to the period from prehistory to around 1500 CE (Reid, 2021). Southeast Asian identity and the traditions of its formation embody the cultural value of historical consciousness; primordial historical consciousness profoundly influenced the origins of the concept of Southeast Asian identity. Simultaneously, the transmission of ideas affected the characteristics of cultural homogeneity in ancient Southeast Asia and the emergence of early sub-regional identities. By summarizing and evaluating human social practices, primordial historical consciousness played a role in shaping behavioral norms and social order, influencing the formation of cultural identity and ethnic traditions. The formation and construction of a Southeast Asian regional identity were, in certain aspects, influenced by this primordial historical consciousness.

Southeast Asian creation myths often concern the origins of grains and animals. Distinctive grain-origin myths include the "flying grain" type in Vietnam and Cambodia, the "body transformation" type in Indonesia and the Philippines, and the "hero steals the grain" type in Indonesia (Reid, 2021). These rich grain myths provide significant information about the emergence and development of primitive agriculture in Southeast Asian countries, particularly illuminating the history of Southeast Asian rice culture.

History is the summation of human existence and its experiences. The Southeast Asian myths that narrate the origins of the cosmos represent an early understanding of the primordial living environment, which serves as a prerequisite for discussing the origins of humankind and the course of human history. The primitive social environment exerted a significant influence on people's beliefs and customs. Guided by the idea that environmental changes shaped the origins of heaven, earth, and humanity, and through the gradual development of self-awareness, the ancestors of Southeast Asia profoundly influenced the subsequent formation and evolution of the region's identity and cultural characteristics. This worldview also shaped Southeast Asians' later attitudes toward socio-cultural transformation, leading to the "localization" process in which foreign cultures were continuously integrated with indigenous concepts (Sun, 2003).

Furthermore, Southeast Asian megalithic culture demonstrates a skillful combination of ancestor worship and nature worship. The stone circle discovered in Kelantan is a remnant of large-scale ancestral sacrifices. The megalithic culture most indicative of ancestor worship in Southeast Asia is found primarily in the Indonesian archipelago, where stone tables, seats, and platforms—sites for ancient rituals—all exemplify ancestor worship. Vietnamese scholar Nguyễn Văn Chính argues that scholars emphasize the role of ancestor worship and its evolution into a national cultural identity and philosophy to seek a cultural identity shared by the Vietnamese people. Primitive people preserved memories of all periods of their lives; these constantly re-emerging memories maintained their sense of ethnic identity through a continuous relationship. "There is no traditional form that does not legitimize itself through history." The instrumental nature of ethnic identity is evident; it "forms a consensual cultural identity through interaction, adopting socially transmitted cultural inheritance rather than biological instinct, continuously realizing the socialization of individual consciousness and the individualization of social consciousness." Identifying with ancestors manifests the ethnic identity function of primordial historical consciousness. The formation and development of ethnic identity, to some

extent, hindered the formation of national and regional identities, yet simultaneously provided the potential for the later emergence of national identity.

## II. The "Regional Concept" during the Colonial Period

Most ASEAN countries share a history of colonization by European powers. This historical background has resulted in great cultural, religious, and linguistic diversity. Such diversity poses challenges to regional integration, yet it also provides opportunities for fostering mutual understanding and cooperation.Ample evidence suggests that early Southeast Asian states emerged along the trade routes between India and China. Trade provided these states with new resources—such as weapons and luxury goods—and introduced new concepts of political organization and legitimacy that rulers adopted to expand their authority and control (Zheng, 2011). Anthony Reid argues that trade not only created states but also forged regions. During the “Age of Commerce” (15th–17th centuries), commercial interactions connected major maritime cities in Southeast Asia, including Melaka, Johor, Pasai, Patani, Aceh, and Brunei. The expansion of regional trade reduced cultural barriers and accelerated the spread of the Malay language as a lingua franca of commerce (Reid, 2013).

The arrival of Western colonizers subsequently led Southeast Asia toward a shared historical destiny (Yue, 2010). Confronted with common threats, a new sense of regional consciousness gradually emerged and intensified. The arrival of European colonial powers in the early 16th century marked the beginning of a new era for Southeast Asia. Amidst the ensuing chaos and foreign interventions, religion became a vital cohesive force, playing an irreplaceable role in Southeast Asian social life.From the late 18th century onward, the overall influence and penetration of the West deepened, drawing the region profoundly into the course of world history and triggering extensive socio-cultural transformations. Colonialism and anti-colonial struggles became the core driving forces shaping these transformations, significantly contributing to the strengthening of regional consciousness across Southeast Asia.

## III. The Reshaping of Southeast Asian Identity in the Post-War Era

Prior to ASEAN's establishment, World War II and the Cold War significantly reshaped conceptions of Southeast Asian identity. However, any optimism among scholars regarding the potential for a regional order based on perceived cultural homogeneity was counterbalanced by the emergence of "nation-states" in the Southeast Asian political landscape, which prioritized safeguarding their own independence. Most scholars of International Relations contend that World War II constructed the concept of "Southeast Asia," arguing that its origins can be traced to two key features of the war (He & Guo, 2008).

Japan’s colonial rule brought Southeast Asia under a unified administration for the first time. The impact of Japanese occupation on regional identity differed from that of the European colonial period. Japan adopted an encouraging attitude toward Southeast Asian nationalists; yet this unintended political stance inadvertently stimulated the growth of regional consciousness. Japanese rule disrupted the colonial divisions established by Western powers and enabled mutual recognition among nationalist leaders across Southeast Asian countries.Japan’s occupation objectively led to a reconfiguration of the regional order in Southeast Asia, and the challenge to Japanese hegemony became a driving force behind the emergence of the concept of “Southeast Asia.” After Japan’s surrender, its influence extended over much of southern Indochina and large parts of Indonesia, with its headquarters relocated to Singapore. Except for Britain, the former colonial regimes in Southeast Asia relied entirely on the United States, and the Allied Command soon became the principal representative of security and political authority in the region.

From the early post-war period, although the political future of Southeast Asia remained uncertain, efforts to restore regional cultural cohesion had already begun. Japan's conquest of Southeast Asia and the emergence of entities like the Allied Command attracted international attention to the region, laying the groundwork for a regional geopolitical framework that had been absent during the colonial era. The Cold War prompted the further development of this framework, but the Southeast Asian regional order remained primarily influenced by external events and forces.

Moreover, prior to the founding of ASEAN, initial attempts to foster a Southeast Asian regional identity through interstate cooperation proved unsuccessful.

## IV. Contemporary Driving Factors

Firstly, territorial disputes and historical conflicts, such as the South China Sea issue and the Cambodia-Thailand border conflict, exist among ASEAN member states. While these frictions impede the integration process to some extent, they also compel member states to seek resolution through negotiation and cooperation, thereby paradoxically strengthening regional cohesion (Yang, 2007). Furthermore, major powers like China, the United States, Japan, and the European Union exert significant influence on ASEAN nations, maintaining close ties in trade, investment, and security. The policies and actions of these external powers considerably shape ASEAN's internal dynamics and integration trajectory.

Secondly, ASEAN countries collectively face the common challenges of improving living standards, promoting economic development, and maintaining regional stability. The recognition of these shared objectives fosters cooperation among members. ASEAN integration is not merely intergovernmental collaboration but also involves people-to-people exchanges and cooperation. Collaborative efforts in education, cultural exchange, tourism, and business activities contribute to building a regional identity and enhancing mutual understanding and trust among their populations.

Finally, advancements in information technology have facilitated more efficient communication and cooperation among ASEAN states. The rise of the digital economy, cross-border e-commerce, and digital services presents new opportunities for regional integration.

## V. Conclusion

By examining the origins and evolution of the concept of regional identity in Southeast Asia, with a focus on identity consciousness in its early history and the

development of regional awareness through colonial intrusion, this paper concludes as follows:

The intellectual orientation of Southeast Asia's ancestors, rooted in contemplating cosmic and human origins in response to environmental changes, influenced the region's cultural traits during the formative stage of its ambiguous cultural identity. The cultural values within their primordial historical consciousness formed the substrate for vague ethnic identities and unique cultural traditions. Subsequently, the formation of Southeast Asian state systems and the development of sub-regional consciousness interacted mutually. Following the emergence of early states, historical consciousness gradually became rationalized and nationalized, while clan-based identity transformed into state-based identity. The establishment of centralized systems further elevated the prominence of national identity (Chen, 2010). Enhanced interstate exchanges and shifts in the world order led to the emergence of a sub-regional consciousness around the Strait of Malacca circa 1500. Colonial invasion precipitated significant social transformations in Southeast Asia. A sense of crisis strengthened both national and regional identities. Suzerain identity, national identity, and regional awareness became intertwined. In the post-World War II era, Southeast Asian nations required a regional culture that could internalize a confident "self-identity," aiming to strengthen national identity and thereby diminish the affinity some populations felt towards former colonial powers. At this juncture, although the region's future development demanded a stronger regional identity, the shaping, characteristics, and sentiments of a Southeast Asian identity are historically derived. This ensures that the evolution of the regional identity concept remains grounded in the foundation of nation-state identity.

Historical factors exert multifaceted influences on ASEAN integration, presenting both challenges and opportunities. ASEAN member states must seek a path of common development based on respect for their respective histories and cultural diversity to achieve closer regional integration.

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