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International Journal of Engineering Technology Research & Management (IJETRM)
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UNION DENSITY AND INTERINDUSTRY WAGE DIFFERENTIALS IN URBAN CHINA

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ABSTRACT
Interindustry wage differentials remain a defining feature of urban labor markets in China, reflecting persistent structural inequalities shaped by institutional, sectoral, and demographic factors. Among these, union density plays a critical yet uneven role in influencing wage outcomes across industries. This article examines how variations in union presence interact with labor market segmentation, ownership structures, education, and digitalization to shape interindustry wage differentials in urban China. Drawing on a synthesis of empirical and theoretical research, the study situates union density within the broader context of China's market transition, globalization, and evolving employment arrangements. Particular attention is paid to differences between state-dominated and market-oriented sectors, high-wage industries, and emerging forms of platform-based employment. By integrating evidence from labor economics, sociology, and demographic research, the article contributes to a deeper understanding of the mechanisms through which unions mediate wage inequality across industries. The findings highlight both the continued relevance and the structural limitations of unions in addressing wage disparities in contemporary urban China

Keywords:
Union density; Interindustry wage differentials; Labor market segmentation; Wage inequality; Institutional economics; Urban labor markets; China; Sectoral wage structure

1. INTRODUCTION

Interindustry wage differentials have long attracted scholarly attention as a central dimension of labor market inequality. In urban China, workers employed in different industries experience markedly different wage outcomes, even when controlling for education, experience, and occupation. These disparities reflect not only productivity differences but also institutional arrangements, ownership structures, and bargaining power across sectors. Among institutional factors, union density occupies a particularly important yet contested role in shaping wage structures. While trade unions are traditionally viewed as mechanisms for protecting workers' interests and compressing wage distributions, their effectiveness varies substantially across industries and institutional contexts.

China's urban labor market presents a unique setting for examining the relationship between union density and interindustry wage differentials. During the socialist era, unions functioned primarily as instruments of state administration rather than independent bargaining agents. Market reforms introduced since the late 1970s have transformed wage determination mechanisms, weakened centralized wage controls, and increased wage dispersion across industries (Gustafsson & Li, 2000). These reforms have also altered the role of unions, particularly as private and foreign-invested enterprises expanded in urban areas.

The transition from a planned to a market-oriented economy fundamentally reshaped interindustry wage structures in China. Under the planned system, wages were largely standardized across industries, limiting wage differentials and suppressing inequality. Market reforms introduced performance-based pay, decentralized wage-setting, and competition across industries, leading to growing wage dispersion (Shen & Deng, 2008). Research consistently shows that interindustry wage differentials widened significantly during the reform period, particularly in urban areas where industrial diversification and private-sector expansion were most pronounced (Liu et al., 2000).

2. LITERATURE REVIEW

2.1 Interindustry Wage Differentials: Conceptual Foundations

Interindustry wage differentials refer to systematic differences in average wages across industries that cannot be fully explained by worker characteristics or productivity. Traditional labor economic theories attribute these differentials to variations in capital intensity, skill requirements, and profitability. However, institutional and

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segmentation-based theories emphasize the role of bargaining power, labor market institutions, and industry-specific norms in shaping wage outcomes. In the Chinese context, these institutional explanations are particularly salient due to the legacy of state control and the uneven pace of market reform (Gustafsson & Li, 2000).

Early empirical studies documented relatively compressed wage structures across industries during the planned economy period. With market transition, wage dispersion increased substantially, revealing pronounced interindustry differentials in urban China (Shen & Deng, 2008). These changes laid the foundation for examining the institutional determinants of wage inequality, including the role of unions.

2.2 Union Density and Wage Compression

Union density is widely associated with wage compression and reduced inequality in comparative labor market research. Unions can influence wage outcomes by standardizing pay scales, enhancing bargaining power, and reducing discriminatory practices. In China, however, the relationship between union density and wages is shaped by the distinctive role of trade unions within the socialist and post-socialist system. Rather than acting as independent bargaining agents, unions have historically functioned as intermediaries between the state and workers (Liu et al., 2000).

Empirical evidence suggests that higher union density in state-dominated industries is associated with more compressed wage distributions and smaller wage gaps (Ma, 2018). However, this effect weakens in private and foreign-invested industries where unions are less influential. These findings indicate that union density matters, but its impact is contingent on broader institutional arrangements.

2.3 Ownership Structure and Industry Segmentation

Ownership-based segmentation remains a central determinant of interindustry wage differentials in urban China. Studies consistently show that state-owned enterprises offer more stable wages and narrower wage dispersion compared to private-sector firms (Gustafsson & Li, 2000). Industries dominated by private ownership tend to exhibit higher wage inequality, reflecting flexible wage-setting and weaker institutional constraints.

Union density interacts closely with ownership structure. State-dominated industries maintain higher levels of unionization, which contributes to wage stability, while market-oriented industries experience both lower union density and greater wage dispersion (Ma, 2018). This interaction underscores the importance of analyzing unions within a segmented labor market framework rather than as isolated institutions.

2.4 Gender, Migration, and Interindustry Inequality

Interindustry wage differentials intersect with gender and migration status in significant ways. Women and migrant workers are disproportionately concentrated in low-wage industries with weaker union presence, reinforcing structural inequality across urban labor markets (Qin et al., 2016). Gender wage gap research shows that industries with stronger institutional protections tend to exhibit narrower gender wage disparities, suggesting an indirect role of unions in mitigating inequality (Bai et al., 2022; Tan et al., 2025).

These patterns highlight how union density contributes to interindustry wage differentials not only through wage-setting mechanisms but also through its influence on workforce composition and employment stability.

2.5 Globalization and Industry-Level Wage Dispersion

Globalization has further reshaped interindustry wage differentials in urban China. Export-oriented and foreign-invested industries often offer higher wages but also display greater wage dispersion due to performance-based pay and flexible employment practices (Chen et al., 2013). Union density in these industries tends to be lower, limiting collective regulation of wages. As a result, globalization has contributed to widening wage gaps across industries, particularly in urban regions integrated into global markets.

3. METHODOLOGY

3.1 Research Design and Analytical Approach

This study adopts a systematic integrative review and comparative analytical approach to examine the relationship between union density and interindustry wage differentials in urban China. Given the institutional complexity of China's labor market and the diversity of empirical strategies used in existing studies, an integrative methodology is appropriate for synthesizing evidence across sectors, ownership structures, and time periods. Rather than generating new primary data, the study consolidates findings from peer-reviewed empirical research, meta-analyses, and sector-specific studies to identify consistent patterns and mechanisms linking union density to wage outcomes (Shen & Deng, 2008; Iwasaki & Ma, 2020). This approach allows for a comprehensive assessment of how union presence interacts with labor market segmentation, education, gender,

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migration, and digitalization to shape interindustry wage differentials. It is particularly suitable for addressing structural research questions that cannot be adequately captured through single-dataset analyses (Zhu, 2025).

3.3 Conceptualization of Union Density

Union density is conceptualized in this study as the proportion of workers within an industry or sector who are union members, reflecting the degree of collective representation and institutional bargaining capacity. In the Chinese context, union density varies substantially across industries due to differences in ownership structure, regulatory oversight, and historical legacy. State-dominated industries typically exhibit higher union density, while private, foreign-invested, and platform-based industries demonstrate significantly lower levels of unionization (Liu et al., 2000; Han et al., 2024).

Importantly, union density in China does not always correspond to independent collective bargaining power. As prior research emphasizes, trade unions often function within state-aligned institutional frameworks, which shapes their influence on wage-setting and limits their autonomy (Shen & Deng, 2008). This study therefore treats union density as an institutional moderator rather than a direct proxy for bargaining strength.

3.4 Measurement of Interindustry Wage Differentials

Interindustry wage differentials are measured across the reviewed studies using average wage comparisons, regression-adjusted wage premiums, and decomposition techniques. These methods isolate industryspecific wage effects by controlling for worker characteristics such as education, experience, occupation, and gender (Jong-Wha Lee & Wie, 2017). Differences that persist after such controls are interpreted as evidence of structural or institutional wage differentiation.

Several studies employ Oaxaca–Blinder decomposition to distinguish between explained and unexplained components of wage differentials, allowing for assessment of the role of institutional factors, including union density (Bai et al., 2022; Iwasaki & Ma, 2020). By synthesizing these approaches, the study identifies robust patterns linking industry-level unionization to wage dispersion.

3.5 Sectoral and Industry Classification

Industries are grouped into four broad categories for analytical clarity:

1. State-dominated industries,
2. Market-oriented private industries,
3. High-wage strategic industries (e.g., energy and finance)
4. Digital and platform-based industries.

This classification reflects differences in union density, wage-setting mechanisms, and exposure to globalization. State-dominated industries typically exhibit higher union density and standardized wages, while market-oriented and digital industries display greater wage dispersion and weaker collective institutions (Ma, 2018; Han et al., 2024).

4. RESULTS

4.1 General Patterns of Interindustry Wage Differentials

The synthesized findings reveal substantial and persistent interindustry wage differentials in urban China. Workers employed in different industries experience significantly different wage outcomes, even after accounting for education, experience, and occupation. These differentials have widened over time, particularly following market reforms that decentralized wage-setting and increased competition across industries (Gustafsson & Li, 2000; Shen & Deng, 2008).

High-wage industries such as energy and finance consistently offer wage premiums relative to manufacturing and service sectors. However, access to these industries is uneven, contributing to structural wage inequality across the urban labor market (Jong-Wha Lee & Wie, 2017).

4.2 Union Density and Wage Compression

A key result is the association between higher union density and reduced wage dispersion within and across industries. State-dominated industries with stronger union presence tend to exhibit more compressed wage structures and smaller interindustry wage gaps (Liu et al., 2000; Ma, 2018). Union density contributes to standardized pay scales, limits excessive wage dispersion, and reduces managerial discretion in wage determination.

However, this effect is not uniform. In market-oriented industries, where union density is lower and unions have limited influence, wage differentials are substantially larger. These findings suggest that union density moderates, but does not eliminate, interindustry wage inequality.

4.3 Ownership Structure and Differential Union Effects

Ownership structure strongly conditions the impact of union density on wages. In state-owned enterprises, unions are embedded within organizational governance structures, reinforcing wage stability. In contrast,

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private and foreign-invested industries exhibit weaker union presence and greater wage flexibility, resulting in wider interindustry wage differentials (Ma, 2018; Chen et al., 2013).

Globalized industries often pay higher average wages but also demonstrate greater internal inequality due to performance-based pay and limited collective regulation (Chen et al., 2013). Education significantly shapes access to high-wage industries, reinforcing interindustry wage differentials. However, returns to education vary by union density. Industries with stronger institutional protections offer more predictable educational returns, while market-driven industries display higher dispersion (Li, Hu, & Jin, 2025). This interaction amplifies inequality among equally educated workers across industries. Women and migrant workers are disproportionately concentrated in low-wage, low-union-density industries, exacerbating interindustry inequality (Qin et al., 2016; Tan et al., 2025). Industries with stronger union presence tend to show narrower gender wage gaps, indicating an indirect equalizing effect of unions (Bai et al., 2022).

Union Density and Interindustry Wage Differentials in Urban China

Industry Category	Union Density	Interindustry Wage Differential	Key Characteristics
State-dominated industries	High	Low	Standardized wages, institutional oversight
Private market-oriented industries	Low	High	Flexible pay, weak regulation
High-wage strategic industries	Moderate	Moderate–High	Wage premiums, unequal access
Digital/platform industries	Very low	Very high	Algorithmic management, wage volatility

Table 1 highlights how variations in union density correspond to differences in interindustry wage dispersion.

DISCUSSION

The findings of this study underscore the complex and context-specific role of union density in shaping interindustry wage differentials in urban China. Unlike in many Western economies where unions function as independent collective bargaining agents, Chinese trade unions operate within a state-aligned institutional framework. As a result, union density in China reflects not only worker representation but also sectoral governance structures and ownership regimes (Shen & Deng, 2008). This institutional embeddedness explains why higher union density is associated with wage compression in some industries, particularly state-dominated sectors, but has a more limited impact in market-oriented and digital industries.

The results align with earlier research showing that unions in state-owned enterprises contribute to standardized wage-setting mechanisms, reducing wage dispersion both within and across industries (Liu et al., 2000; Ma, 2018). However, the moderating effect of union density weakens as market forces intensify, suggesting that unions alone are insufficient to counteract structural drivers of wage inequality.

The discussion of interindustry wage differentials must be situated within the broader framework of labor market segmentation. Prior studies emphasize that China's labor market is divided along ownership, industry, and employment form lines, each with distinct wage-setting mechanisms (Li, Tang, & Jin, 2024). The present findings reinforce this view by demonstrating that union density interacts with segmentation rather than overriding it.

Industries with higher union density often coincide with sectors that benefit from state protection, regulated employment contracts, and stable wage scales. In contrast, low-union-density industries—particularly private and platform-based sectors exhibit higher wage dispersion and greater exposure to market volatility (Han et al., 2024). This suggests that union density functions as one institutional layer within a segmented labor market, offering partial protection rather than comprehensive equality.

An important implication of the results concerns the interaction between union density and educational returns. While education remains a key determinant of wages across industries, its returns are unevenly distributed. In industries with stronger union presence, educational returns tend to be more predictable and less dispersed, reflecting standardized pay structures (Li, Hu, & Jin, 2025). Conversely, in low-uniondensity industries, education interacts with performance-based and individualized pay systems, amplifying wage inequality. This finding contributes to the literature on market transition and education by demonstrating that institutional

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contexts shape not only access to education but also its labor market value (Hannum, 2005). Union density thus indirectly influences interindustry wage differentials by moderating how education is rewarded across sectors.

CONCLUSION

This study examined the role of union density in shaping interindustry wage differentials in urban China through an integrative analysis of existing empirical literature. The findings reveal that substantial wage differentials persist across industries, reflecting structural segmentation, ownership differences, and varying institutional arrangements. Union density emerges as an important, though limited, moderating factor that contributes to wage compression in certain sectors, particularly state-dominated industries.

However, the influence of union density is uneven and increasingly constrained by marketization, globalization, and digitalization. In low-union-density industries, wage dispersion remains high, reinforcing interindustry inequality despite overall economic development. The study contributes to the literature in three key ways. First, it extends research on wage inequality by focusing on interindustry differentials rather than solely individual-level wage gaps. Second, it highlights the conditional role of union density within China's unique institutional environment, emphasizing that unions operate as part of broader governance structures rather than independent bargaining agents (Shen & Deng, 2008).

Third, the study integrates education, gender, migration, and digitalization into the analysis, demonstrating that union density interacts with these factors to shape wage outcomes. This multidimensional perspective advances understanding of how institutional and market forces jointly produce wage inequality. From a policy perspective, the findings suggest that reducing interindustry wage differentials requires more than increasing union membership rates. Institutional reforms should aim to enhance the effectiveness and representativeness of unions, particularly in private and digital industries. Policies that promote inclusive labor representation for women, migrants, and platform workers are essential to addressing structural wage inequality (Qin et al., 2016; Han et al., 2024).

Moreover, aligning educational expansion with institutional protections could help ensure that returns to education are more evenly distributed across industries. The study is subject to limitations inherent in integrative reviews, including variations in data sources and methodologies across studies. Future research could build on this work by employing longitudinal datasets to examine causal relationships between changes in union density and wage differentials. Comparative studies across regions or between traditional and digital industries would further enrich understanding.

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