



# The Role of Financial Subsidies in Enhancing Labor Resource Efficiency in Beijing-Tianjin-Hebei Integration

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**Abstract:** The Beijing–Tianjin–Hebei (BTH) region is key to China's regional integration. Industrial gaps and labor mobility barriers (especially in Hebei) reduce labor efficiency. Using relevant theories, this study analyzes how financial subsidies (direct payments, tax incentives, relocation grants, training subsidies) drive BTH industrial transformation and labor mobility, with a mixed-methods approach evaluating their economic and practical effects.

**Keywords:** Beijing-Tianjin-Hebei integration, financial subsidies, labor resource efficiency

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## 1. Introduction

The Beijing-Tianjin-Hebei (BTH) region, a key northern Chinese economic zone, covers ~216,000 sq km with over 110 million people, contributing nearly 10% of China's 2020 GDP. Beijing serves as a political and service hub, Tianjin focuses on industry and trade, and Hebei relies on heavy industry and agriculture. The 2014 BTH Integration Plan aims to address economic, environmental, and industrial imbalances to optimize resource and labor allocation. However, the region faces severe labor mismatch: Hebei's traditional industries demand low-skilled, low-wage labor, while Beijing and Tianjin attract skilled talent in high-tech and services. Gaps in welfare, healthcare, and housing also hinder labor mobility. As a core policy measure, financial subsidies support labor relocation, workforce training, Hebei's industrial upgrading, and the transfer of labor-intensive industries from Beijing and Tianjin to Hebei. [1]

## 2. Problem statement

Despite Hebei's strategic role in BTH integration, its economic growth, industrial modernization and employment lag behind Beijing and Tianjin. The effects of fiscal incentives for industrial transformation and labor mobility remain unclear. Resource and high-pollution industries hinder high-tech upgrading; tech and R&D subsidies focus on short-term costs, while tax incentives for industrial upgrading lack proven efficacy. High mobility barriers persist as many Hebei workers relocate to Beijing and Tianjin, yet current policies lack empirical support to ease these barriers. The long-term impacts of worker subsidies and tax incentives for local hiring are uncertain. Furthermore, uneven labor distribution, limited intercity flow, unbalanced industrial development, weak innovation and environmental constraints further reduce labor efficiency and impede regional integration.

## 3. Research objectives

This study focuses on Hebei Province and sets the following objectives:

①Examine direct payments' impact on industrial transformation. ②Analyze tax incentives' role in facilitating industrial transformation. ③Investigate direct payments' influence on labor mobility. ④Evaluate tax incentives' impact on labor mobility. ⑤Explore relocation grants' role in enhancing labor mobility. ⑥Assess training and upskilling subsidies' contribution to labor mobility. ⑦Explore stakeholders' perceptions of financial subsidies' effectiveness in promoting industrial transformation in Hebei. ⑧Identify perceived barriers and enablers affecting labor mobility despite subsidies.

## 4. Theoretical foundations

### 4.1 Regional integration theory

Regional Integration Theory explains integration among geographically connected regions. Developed from European integration research, it emphasizes that integration promotes growth, labor mobility and industrial transformation through lower trade barriers and policy coordination. It provides a framework for analyzing the effects of inter - regional coordination on industrial restructuring and labor flow in BTH. Financial subsidies reduce allocation frictions and support balanced

regional development.

## 4.2 Regional economic theory

Regional Economic Theory explores the spatial distribution of economic activities, analyzing factors like regional growth disparities, industrial agglomeration and labor mobility. It shows that market forces and government policies are crucial in shaping regional economic dynamics. In the BTH region, this theory helps understand how financial subsidies can correct economic imbalances, promote Hebei's industrial upgrading and ease industrial over-concentration in Beijing and Tianjin. For instance, direct payments, tax incentives and relocation grants can reduce enterprise costs and labor migration barriers.

## 4.3 Labor mobility theory

Labor Mobility Theory states that workers migrate due to wage differences and job opportunities, but migration is restricted by financial, institutional and social factors. This study applies the theory to explore how financial subsidies reduce relocation costs, address skill mismatches and enhance workers' migration willingness. Qualitative research in the study also reveals non-economic factors affecting labor mobility, enriching the theory's connotation.

## 5. Types of financial subsidies

Direct subsidies are one-time government fiscal transfers for enterprise transformation, compliance upgrading and cost reduction. Tax incentives attract high-tech enterprises, guide industrial clustering in Hebei and optimize industrial structure. Training skill subsidies, based on human capital theory and referring to foreign systems, solve skill mismatches and enhance workers' cross-regional employment ability. Relocation subsidies, like those in Australia's plans, reduce relocation burden and improve labor space mismatch.

## 6. Research methodology

### 6.1 Research design

This study uses a mixed-methods approach, combining quantitative and qualitative research to analyze the impact of financial subsidies on industrial transformation and labor mobility in Hebei. Quantitative methods establish variable relationships, and qualitative methods explore stakeholders' perceptions and policy implementation mechanisms.

### 6.2 Sample and sampling method

**Quantitative Research Sample:** The target population includes 100 business owners and managers, 50 government officials and policymakers, and 150 workers and migrants, totaling 300 respondents. Stratified random sampling is used to ensure representative samples from each group.

**Qualitative Research Sample:** Purposive sampling is adopted to select 10–15 business executives, 8–12 policymakers, and 8–12 workers and migrants for semi-structured interviews and focus group discussions.

### 6.3 Data collection

**Quantitative Data Collection:** A questionnaire survey is conducted on the Wenjuanxing platform. It's designed based on validated scales from existing studies, covering variables like direct payments, tax incentives, etc. The survey is distributed via multiple channels, including email, WeChat groups and job centers.

**Qualitative Data Collection:** Semi-structured interviews are conducted with key stakeholders. The interview guide has core questions about the impact of financial subsidies on enterprise technological upgrading, etc. Interviews are recorded, transcribed verbatim and member-checked for data accuracy.

### 6.4 Data analysis

**Quantitative Data Analysis:** Descriptive statistics are used to summarize sample characteristics. Regression analysis and Structural Equation Modeling (SEM) are applied to test the relationships between financial subsidies and industrial transformation, as well as labor mobility.

**Qualitative Data Analysis:** Thematic analysis is conducted using NVivo 14 software. The analysis follows Braun and Clarke's six-phase framework to identify key themes and patterns in the interview data, exploring stakeholders' perceptions and policy implementation barriers.

## 7. Scope and limitations

### 7.1 Scope

The study focuses on the BTH region, with a temporal scope covering the past 5 to 10 years of subsidy policies. It mainly examines the impact of four types of financial subsidies on labor resource efficiency, targeting workers in Hebei, as well as policymakers and enterprises involved in subsidy programs.

### 7.2 Limitations

**Regional Limitation:** Restricted to the BTH region, conclusions may not apply to other Chinese or international urban clusters. **Data Limitation:** Using government and academic data, there may be issues in completeness and accuracy, especially for subsidy program outcomes. **Factor Limitation:** Focusing on financial subsidies, the study omits full analysis of other factors (e. g., institutional barriers, labor regulations) affecting labor efficiency. **Temporal Limitation:** Assuming stable regional economic and political conditions, policy shifts and external shocks may limit the findings' applicability.

## 8. Significance of the study

This study empirically found that fiscal subsidies can reduce regional friction, providing new evidence for policy - promoted integration and balanced growth. By combining multiple methods, it reveals the reshaping effect of fiscal incentives on economic spatial equilibrium and improves the theory of state - led regional economic intervention. Incorporating behavioral and institutional factors, it expands the theory of labor mobility. The research offers empirical reference for formulating precise subsidy policies, optimizing the labor market, and narrowing regional disparities in the Beijing-Tianjin-Hebei region. Moreover, it helps Hebei enterprises upgrade technology and talents, connect Beijing - Tianjin enterprises with local labor, and proposes feasible solutions to balance labor supply and demand, improve regional resource allocation and economic efficiency.

## References

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