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Reconstruction of Population Mobility Patterns and Economic Growth in Western China: Macro Convergence, Institutional Constraints, and Micro Mechanisms

Yaoxue Xu

Xi'an Gaoxin No.1 High School, Xi'an, China
yoore1zZ@163.com

Abstract. Whether increased mobility generates growth remains contested. Convergence findings from provincial-level studies disappear upon disaggregation to county-level data, as population-weighted averaging allows major urban centers to dominate while peripheral counties vanish statistically. This paper argues for shifting the research question from whether mobility promotes growth to where and under what conditions it does so. Three friction points emerge—spatial scale selection, institutional thresholds, and micro-transmission mechanisms—yet these operate interdependently rather than separately. Hukou restrictions deter long-term settlement; land tenure insecurity blocks housing investment; weak public services in non-core counties repel skilled labor. The resulting semi-urbanized population circulates rather than integrates. A critical finding suggests that current western development strategies celebrating aggregate migrant numbers may conflate redistribution with structural transformation. To optimize the spatial development pattern, it is necessary to strengthen the functional division and coordinated development among various urban agglomerations in the western region, focus on enhancing the public service carrying capacity of small and medium-sized cities and counties, and build a multi-level and differentiated urban system, providing spatial support for the positive interaction between population mobility and regional economic growth.

Keywords: western China, population restructuring, growth heterogeneity, institutional thresholds, spatial scale

1. Introduction

Since the reform and opening up, China has witnessed the largest population mobility in human history [1]. The country gradually broke the strict household registration control and regional division under the planned economy system, and the market economy system has been continuously improved. The free allocation of production factors across regions has become a trend. The eastern coastal areas, with their geographical advantages and policy incentives, have taken the lead in achieving rapid industrialization and urbanization [2]. Labor-intensive industries such as manufacturing, construction, and services have emerged in clusters, generating a continuous and large-scale demand for labor. Meanwhile, there are a large number of surplus laborers in rural areas

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of the central and western regions. The significant disparities in income levels, employment opportunities, and public services between urban and rural areas and among regions have created a strong driving force for population migration from less developed areas to more developed ones. The continuous improvement of transportation infrastructure and the gradual improvement of the labor market have also provided realistic conditions for large-scale cross-regional mobility.

In recent years, this pattern has undergone profound changes: long-distance inter-provincial mobility has slowed down, while intra-provincial and intra-regional migration has increased, and the trend of return migration and local employment has strengthened. Western urban agglomerations such as Chengdu-Chongqing and Guanzhong have gradually become new population absorption centers [3]. During this stage, China's population mobility has shown typical characteristics of being unidirectional, long-distance, and large-scale. The overall mobility pattern has been characterized by the concentration of population from rural areas in the central and western regions to eastern coastal cities, and from inland areas to core urban agglomerations such as the Pearl River Delta, the Yangtze River Delta, and the Beijing-Tianjin-Hebei region. Labor mobility has mainly been long-distance and inter-provincial, with migrant workers staying away from their hometowns for long periods and mainly finding stable employment in eastern coastal cities. The population flow has been highly concentrated and the spatial distribution extremely uneven, forming a long-term and stable pattern of "strong east, weak west, fast south, slow north" in population migration.

Recent trends documented in official surveys suggest western local employment has expanded considerably, yet the aggregate figure conceals sharp internal variation. Some western urban agglomerations now function as population absorption centers, while peripheral counties continue losing working-age residents. This spatial polarization complicates the standard narrative of "diverse reconstruction" [4]. Rather than assuming mobility automatically benefits receiving areas, this paper asks why certain western localities convert population gains into structural transformation while others merely absorb surplus labor. The question requires disaggregating beyond provincial averages —a methodological choice that existing literature often neglects. This pattern reconstruction is precisely the core research object of this study on the reconstruction of population mobility patterns and economic growth in western China. The return migration and local concentration of population, as well as the emergence of new population absorption centers in western urban agglomerations, have directly changed the long-term situation of factor outflow in the western region, providing human resource support for the development of industries, urbanization, regional innovation, and the expansion of domestic demand in the west, and becoming a new driving force for the endogenous growth of the western economy. The interaction mechanism, influence path, and actual effects between the two are the key contents that this study needs to focus on and re-examine, and also provide an important practical basis for exploring the path of high-quality development in the west in the new era.

This article conducts a systematic review of relevant literature from three dimensions. At the macro level, it focuses on sorting out the existing research on the relationship between population mobility and regional economic convergence, and analyzes the different viewpoints and empirical conclusions of the academic community on whether population mobility can promote regional economic convergence. At the institutional level, it further examines the moderating role of institutional factors such as the household registration system, land system, and public service system, explores how these institutions affect the integration of the floating population in the inflow areas and their effective transformation of productivity, and sorts out the mediating and moderating mechanisms of various institutional factors in the relationship between population mobility and regional economic growth. At the micro level, it focuses on the individual behavior of the floating

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population, analyzes the process by which individuals transmit their development momentum to regional economic growth through specific behavioral paths such as entrepreneurial activities, human capital accumulation, and labor market participation, sorts out the existing research on the argumentation and verification of individual behavior transmission mechanisms, integrates the logical connection between the micro level and macroeconomic growth, and forms a comprehensive review of the relationship between population mobility and regional economic growth.

2. Macro-level: population mobility and regional growth convergence

Neoclassical predictions—that labor mobility equalizes factor returns—find partial support in provincial-level studies [2]. Net inflow does correlate with per capita GDP growth in western provinces, particularly where policy support concentrates [3]. Yet this correlation reveals little about sub-provincial dynamics. Disaggregation to county-level patterns fractures the mobility-growth linkage. Remittances improve household income without lifting productivity, suggesting "income convergence" and "efficiency convergence" follow different logics.

The scale problem is methodological, not merely technical. Provincial averages weight regions by population, so large urban centers dominate the composite index while peripheral counties disappear statistically [5]. This smoothing creates an illusion of uniformity. In my reading of the literature, studies employing provincial data systematically report convergence, whereas county-level analyses reveal persistent or widening gaps. The contradiction is not resolved by choosing one scale over the other; rather, it indicates that spatial heterogeneity is constitutive, not residual. Recognizing this requires abandoning the search for a single "true" effect of mobility on growth in favor of conditional analyses that specify where and under what circumstances mobility translates into productivity improvement.

3. Institutional constraints: household registration, land, and public services

The hukou system, despite repeated reform announcements, continues filtering migrants into stratified settlement statuses [6]. Megacity residence permits remain difficult to obtain, trapping many migrants in prolonged temporary status. This "semi-urbanized" condition—formally in the city, substantively excluded from its benefits—directly suppresses long-term investment decisions. Families hesitate to enroll children in local schools or purchase housing when settlement prospects remain uncertain. Medical insurance portability, though technically permitted, faces implementation friction that discourages utilization. The result is a mobile population that circulates rather than integrates, accumulating human capital slowly if at all. The land system also poses another constraint. Rural land rights are deeply tied to household registration, making it difficult for farmers to choose between "moving to the city" and "retaining their rights," thus delaying the process of urbanization [7]. Some cities in the western region rely on land finance to support infrastructure development, which, while boosting GDP in the short term, drives up housing prices and increases the cost of settlement, creating a "growth-exclusion" paradox.

It is worth noting that there is a high degree of differentiation in the institutional environment within the western region. This differentiation is evident at different levels and in different areas, and it has a significant impact on the regulation of population mobility and growth. In core western urban agglomerations such as Chengdu-Chongqing and Guanzhong, local governments have relatively strong fiscal capabilities, and the level of public service provision is high. Facilities for education, healthcare, and elderly care are continuously improving, making these areas increasingly attractive to high-skilled labor. They are better able to accommodate population inflows and convert

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them into growth drivers. In contrast, the vast majority of western counties face significant institutional and development bottlenecks. These areas have weak fiscal capacity, insufficient and fragmented public service provision, and prominent issues such as a shortage of educational resources, backward medical facilities, and incomplete social security. They not only struggle to attract external labor inflows but may also experience the continuous outflow of local high-quality labor. This hierarchical differentiation in the institutional environment makes the quality of institutions a "threshold variable" for whether the benefits of population mobility can be realized. Practice shows that only when the accessibility of public services and fiscal sustainability reach a certain level can population inflows effectively transform into an endogenous driving force for regional economic growth. Otherwise, even if there is population inflow, it is difficult to form an effective synergy for growth.

4. Micro-mechanism: the transmission chain from individuals to regions

Macro effects are ultimately aggregated from micro behaviors. Migration is highly selective, with the continuous outflow of high-skilled labor exacerbating the "talent drain" in the west. However, the recent trend of return migration has brought about a turning point. Returnees often enter fields such as agricultural product processing, e-commerce, and rural tourism, and their enterprises have higher survival rates and employment creation effects than local indigenous enterprises [8].

Remittances, as an important channel, have growth effects that depend on their usage. In the west, remittances are mainly used for consumption such as building houses and weddings, with less than 15% going to productive investment, which limits capital accumulation. At the same time, the main labor force's absence often leads to social costs such as left-behind children and empty-nest elders.

Technological changes are reshaping the transmission path. High-speed rail networks and digital platforms (such as live-streaming e-commerce and remote work) have significantly reduced information frictions, enabling western laborers to participate in the national market virtually, breaking through traditional geographical constraints, and opening up new growth channels for underdeveloped regions.

5. Unified analytical framework and policy implications

This paper proposes a three-layer integrated framework to systematically analyze the complex relationship between the restructuring of population mobility patterns and economic growth in the west. The first layer focuses on the transformation of population mobility patterns. Currently, China's population mobility has moved beyond the past single outflow trend and gradually formed a diversified pattern where return migration, local migration, and circular migration coexist. This transformation has brought new population element support and development opportunities to the economic growth of the west. The second layer examines the behavioral responses of micro-entities. Migrant workers, as the core micro-entities, based on their own human capital levels and family development strategies, will transmit their development momentum to regional economic development through various specific means such as entrepreneurship, remittances, and remote employment, becoming the micro-bond connecting population mobility and regional growth [9]. The third layer emphasizes the regulatory role of the institutional environment. Factors such as the household registration system, land system, and public service system directly affect the behavioral choices of micro-entities and the efficiency of their kinetic energy conversion, determining whether the potential brought by population mobility can be effectively released. It is important to note that

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these three layers do not present a simple linear relationship but have a close feedback interaction mechanism. The entrepreneurial vitality and employment enthusiasm at the micro level can induce adaptive adjustments in local institutions, and the continuous improvement of the institutional environment will further attract more high-quality migrant workers, thus forming a virtuous cycle where population mobility and institutional optimization promote each other. The differences in economic growth among western regions are essentially the differences in their ability to convert the potential of population mobility and release the dividends of population mobility under specific institutional conditions. This is the core logic that the three-layer integrated framework aims to explain.

Based on the internal logic revealed by the above three-layer integrated framework, the policy orientation for promoting high-quality economic development in the west in the future should shift from simply pursuing "the number of people attracted" to a coordinated effort in "institution - capacity - ecology". Through multi-dimensional policy optimization, the dividends of population mobility should be fully released. It is necessary to continue to deepen the reform of the household registration system, break the constraints of the household registration barrier on population mobility, promote the rational allocation of public services based on the scale of the resident population, and strive to achieve the cross-regional portability of core rights and interests such as social security and educational resources, allowing migrant workers to truly integrate into the inflow areas and enhance their long-term development stability and sense of belonging. It is necessary to effectively protect the land rights of farmers who move to cities, explore the paid exit or trusteeship mechanisms for their land contract management rights and homestead use rights, and solve the dilemma between moving to cities and retaining land rights, promoting the orderly advancement of the urbanization process of farmers. It is necessary to focus on stimulating the vitality of micro-entities, increase policy support for returnee entrepreneurship and digital employment, improve the county-level financial service system and skills training mechanism, enhance the entrepreneurial ability and employment quality of migrant workers, and fully release the development momentum at the micro level. To optimize the spatial development pattern, it is necessary to strengthen the functional division and coordinated development among various urban agglomerations in the western region, focus on enhancing the public service carrying capacity of small and medium-sized cities and counties, and build a multi-level and differentiated urban system, providing spatial support for the positive interaction between population mobility and regional economic growth [10].

6. Conclusion

China's migration has restructured. Whether this restructuring generates sustainable growth or merely relocates labor geographically remains uncertain. County-level data re-examination reveals convergence in some localities, persistent gaps in others, with patterns that do not map neatly onto policy intensity or investment volume. Institutional quality was expected to explain this variation; the evidence proves more complex. Fiscal capacity matters, yet timing matters equally—counties that reformed land tenure early gained advantages that later adopters struggle to replicate. The "institution-capacity-ecosystem" formulation captures this poorly, serving as a placeholder rather than a fully developed theory.

Policy recommendations for targeted interventions warrant skepticism. Targeting requires information that county-level data, already five to eight years lagged, cannot provide. By the time analysts identify "high-return" localities, conditions have shifted. Uniform hukou reform may be inefficient, yet it does not demand perfect foresight.

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Several genuine uncertainties persist. Whether skilled and unskilled migrants respond differently to identical institutional environments remains unclear. Whether return migrants bring back useful skills or merely exhausted bodies is unresolved. Whether digital employment platforms transform the geography of opportunity or simply rename informal work requires further investigation. These are not methodological limitations to be fixed in future research. They constitute fundamental uncertainties that additional data may not resolve.

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