

Balanced Regional Growth in China through Optimized Resource Allocation and Industrial Restructuring

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Abstract

In the process of industrialization in China, the intervention of administrative forces in the factor market has resulted in the mismatch of resources and the imbalance of industrial layout, which is closely related to the long-standing gap between the eastern region and the central and western regions. This paper is a structured narrative literature review, which examines how optimizing resource allocation and industrial restructuring can promote more balanced regional growth in different stages of industrialization, and accordingly puts forward differentiated factor allocation strategies. The research comprehensively uses four classical frameworks, namely, Petty-Clark's Law, Hoffmann's Law, the Solow Growth Model and the Lewis Dual Economy Theory, and combines with the empirical research on resource allocation and regional growth in China in recent years. Evidence shows that resource allocation following the natural law of industrial evolution is often associated with lower regional imbalance. This paper interprets the existing literature as pointing to two regional patterns: some eastern regions may face the problems of improper upgrading order and insufficient support for innovation activities, while many central and western regions may show weak industrial capabilities and the outflow of skilled labor and capital. Accordingly, this paper puts forward targeted policy suggestions for various regions that match the stage.

Keywords

resource allocation, industrial structure, regional balanced growth, industrial restructuring

1. Introduction

1.1 Research Background and Practical Significance

Decades of industrialization in China have brought rapid economic expansion, but obvious regional imbalance still exists. In many areas, the way administrative departments allocate production factors does not match the needs of local industries, which aggravates the mismatch of resources. Taking the economic stimulus in 2009-2010 as an example, the credit expansion was biased towards state-owned enterprises and enterprises with low return on capital, which slowed down the reallocation of capital to private enterprises with higher productivity [1]. This kind of government-led distortion is closely related to the decline of productivity, because the development strategy that emphasizes heavy industry often raises the capital-output ratio and

lowers the total factor productivity [2]. At the same time, various regions in China are faced with different factor market distortions and mobility costs, which affect their ability to obtain efficient capital and labor, and may slow down the structural upgrading. The per capita output data by province continuously shows that there is a clear gap between many coastal provinces and inland provinces [3]. These mismatches shape industrial restructuring, and are associated with a larger cross-regional growth gap, so it is meaningful to design matching configuration schemes for different industrialization stages. Although the central government has launched a number of regional plans, the gap between coastal and inland areas is still very large, which shows that the deeper structural mismatch cannot be solved by capital transfer alone.

1.2 Core Research Questions

This paper focuses on a core issue: How can optimizing resource allocation and industrial restructuring promote a more balanced regional economic growth in China? This issue leads to three sub-problems. First, how does resource mismatch shape industrial layout and hinder regional coordinated development? Second, under the circumstances of different levels of industrialization, what are the different effects of factor mismatch in the eastern region and the central and western regions? Third, which differentiated allocation policies can support industrial upgrading and narrow the regional gap? These issues are promoted from the general mechanism, to the regional pattern and specific policies, so that the review remains focused and practical.

1.3 Theoretical and Practical Value

Most existing studies only discuss resource allocation or industrial evolution separately, and rarely construct a complete transmission chain from factor distortion to unbalanced growth. This paper tries to fill this gap by integrating the four classic frameworks into an analytical perspective and interpreting the evidence focusing on China in recent years. As a structured narrative review, this paper selects influential theoretical and empirical results instead of using formal systematic retrieval procedures, so its goal is to sort out and interpret the literature, rather than directly measure the effect. Theoretically, this paper enriches the study of regional industrial economics in China. In practice, the phased and differentiated strategy provides an operable reference for national and regional coordinated governance.

2. Theoretical Background

2.1 Classic Theories of Industrial Evolution

There are two basic theories that describe the flow mode of factors in the process of industrialization. Petty-Clark's Law originates from Colin Clark's early empirical research, and holds that economic development will promote the factors to shift from agriculture to manufacturing and then to service industry, thus forming a regular industrial upgrading path [4]. Hoffmann's Law describes industrialization through the change of the ratio between consumer goods industry and capital goods industry, and holds that with the advancement of industrialization, the relative importance of capital goods industry tends to rise [5]. Modern data on structural changes support this general model and regard it as the redistribution of labor between sectors with different productivity [6]. Together, these viewpoints provide a benchmark for judging whether the industrial structure of a certain region deviates from the reasonable path. In this sense, these two laws play the role of practical yardsticks, because an area that invests too much in sectors far beyond or far behind its own stage often wastes factors.

2.2 The Solow Neoclassical Growth Model

The Solow growth model provides the core logic that links the use of factors with economic efficiency. It defines capital accumulation, labor force growth and technological progress as the core driving forces of long-term output [7]. Later mismatch studies expanded this productivity logic, indicating that distorted factor allocation will depress the overall total factor productivity, because resources are locked in inefficient uses and high-potential activities get too little input. An influential estimate shows that if China raises its allocation efficiency to the level of developed economies, its manufacturing productivity may increase by about 30% to 50% [8]. A widely cited review holds that mismatch is an important and lasting source of productivity

differences among countries, not just a one-time loss [9]. This logic helps to explain why the mismatch of factors is related to the gap between the eastern region and the central and western regions.

2.3 The Lewis Dual Economy Theory

The Lewis dual economy theory explains the process of transferring surplus labor from traditional low-productivity sectors to modern high-productivity sectors [10]. In China, this change is not only influenced by market forces, but also shaped by institutional friction. Recent evidence shows that insecure rural land rights will reduce mobility and slow down the redistribution of labor to more productive uses [11]. Wider migration and trade frictions act in the same direction, and higher migration and trade costs will continue to depress overall productivity and deepen regional spatial inequality [12]. Taken together, these four frameworks constitute an integrated analytical perspective. Together, they mean that a more balanced regional growth is more likely to be realized when the resource allocation is in line with the industrial evolution stage of each region rather than contrary to it.

3. Literature Review

3.1 Research on Industrial Structure Evolution and Restructuring

The analytical framework for tracking industrial transformation was originally formed in Western economic research. Clark described the orderly transfer of production inputs between agriculture, manufacturing and service industries [4], while Hoffmann described industrialization through the changing proportion between consumer goods industry and capital goods industry [5]. Newer cross-country evidence regards this process as the redistribution of labor between sectors with different productivity, and shows that this overall model is established in many developing economies [6]. Early western studies often regarded structural upgrading as a market-led and almost automatic process, and paid little attention to how administrative intervention distorted the natural allocation of factors. Later research revised this view, pointing out that economies with imperfect factor markets often deviate from the standard evolution path. This discussion is particularly important for China, because its factor market is still affected by administrative allocation, so the market-led explanation cannot be copied.

Scholars at home and abroad have extended these classical viewpoints to the regional pattern of China. Based on the research of new structural economics, it is believed that each region should develop industries that match its own factor endowments and comparative advantages, and the effect is best when upgrading follows this logic rather than the official goal [13]. The eastern coastal provinces have turned to the service industry, while many central and inland western regions are still in the middle stage of industrialization. Even so, some studies only describe the visible industrial differentiation, but do not trace this distortion back to the mismatch of the underlying factors. Few studies have designed tailor-made industrial paths for regions at different stages of industrialization, which leaves obvious room for targeted policy analysis.

Another question concerns the direction of restructuring. Some regions may turn to the service industry before the manufacturing base is diversified enough, while others may retain activities that are no longer suitable for local endowments. These risks support a phased restructuring method, which is described by new structural economics as a gradual and closely related to the changing comparative advantages of various regions [13]. This situation means that a single national unified industrial upgrading template is unlikely to be applicable to regions with great differences in endowments. Therefore, the literature points to differentiated restructuring, but there is still a lack of clear explanation on how the allocation of elements should be adjusted at each stage to keep the process on track.

3.2 Research on Resource Allocation Efficiency and Misallocation

The Solow model lays a foundation for linking factor use with long-term productivity, and modern mismatch literature is directly built on it. A landmark study found that if China and India reallocate their capital and labor to the efficiency level of the United States, their manufacturing TFP may be greatly improved, which led to a large amount of research on mismatch around the world [8]. Subsequently, a widely cited review combed the causes and costs of mismatch, and thought that it was an important and dynamic source of productivity difference, rather than a small static loss [9]. However, this kind of overseas research focuses on

the gap between capital and labor at the enterprise level, and less on how mismatches within a large economy differ between regions.

The research focusing on China has expanded this work to the dimensions of ownership, credit, land and region. An early enterprise survey indicates that the return on capital of state-owned enterprises is lower than that of private or foreign-funded enterprises, which points to systematic capital mismatch [14]. A related growth study explains why state-owned enterprises with low productivity can survive because they enjoy better credit channels, while private enterprises with higher productivity rely more on internal savings [15]. Government intervention may deepen these gaps, because stimulus-driven credit expansion leads resources to inefficient enterprises associated with the state-owned sector [1]. At the regional level, a detailed study measures the distortion of factor market across provinces and sectors, and finds that correcting capital mismatch will improve total factor productivity, especially in the western region [16]. Another study linked this pattern with the development strategy, indicating that emphasizing heavy industry will raise the capital-output ratio and depress productivity [2].

Recent micro evidence makes this picture clearer. Household panel data from rural areas of China shows that the friction between land and capital market associated with local land system has restrained more productive farmers and depressed the overall agricultural productivity [17]. Studies on land rights have found that weak or unstable property rights will lead to land mismatch and reduce agricultural efficiency in China [18]. These studies confirm that institutional barriers, not just the scale of investment, are a key source of measurable mismatch. Although this kind of recent research focuses on agricultural land, the same institutional logic, that is, weak market and local rules hinder the flow of factors, is likely to extend to capital and land in industrial and urban scenes.

Despite the abundant evidence, there are still two problems. First, most papers measure the scale of distortion, but do not build a complete chain to explain how mismatch reshapes the industrial layout and then widens the cross-regional growth gap. Second, research often regards allocation efficiency and industrial restructuring as independent topics, thus ignoring the interaction between the two mechanisms. Another shortcoming is that many studies stop at the national average level, without asking why the same distortion is characterized by overcapacity in one region and factor shortage in another. Therefore, this paper holds that the interaction between factor allocation and industrial structure is exactly where regional imbalance is produced to a great extent, and it needs a joint perspective to understand it.

3.3 Research on Regional Economic Imbalance in China

Scholars explain the cross-regional gap in China through various channels, including human capital, openness and infrastructure. These factors are indeed important, but they interact with industrial structure and factor allocation, rather than replacing the latter as an explanation. Therefore, the more recent research turned to industrial structure and factor distribution. The research on the distortion of factor market shows that the mismatch between capital and labor across provinces will depress the overall productivity, and the resulting losses are unevenly distributed among the eastern, central and western regions [16]. Studies on internal trade and migration have found that higher migration and trade costs will inhibit labor productivity and deepen spatial inequality, which means that barriers to factor flow are the direct driving factors of regional differentiation [12]. Evidence on land security points in the same direction, indicating that mobility friction prevents labor from moving to areas with higher returns [11]. These results put resource allocation, not just endowment differences, at the center of regional imbalance discussion.

Policy-oriented research adds another layer of content. Evidence from the Great Western Development Program shows that place-based intervention can promote the growth of backward areas [19]. However, this paper holds that policy design should be consistent with local endowment and avoid weakening market competition, because mismatched support may crowd out resources or maintain industries that do not meet local conditions. The viewpoint of new structural economics is helpful here, because it holds that regional policies have the best effect in strengthening industries that match the comparative advantages of various regions, rather than copying the structure of richer provinces [13]. This shows that the design of regional policies is as important as the scale of support.

After combing this literature, two systematic gaps stand out. First, few studies combine the law of industrial evolution with the logic of factor distortion to explain regional imbalances, so the analysis often stays at the

descriptive level. Second, most policies suggest adopting a unified national plan, without providing differentiated strategies for regions at different stages of industrialization. Because the eastern region and the central and western regions are in different positions on the industrialization path, a single configuration scheme is unlikely to correct their different mismatches. These two gaps are the focus of the next chapter, which brings all the clues together and transforms them into phased and differentiated policy designs.

4. Key Findings and Differentiated Policy Countermeasures

4.1 Overall Summary and Core Findings from the Literature

A core insight can be obtained by gathering the three strands. The regional imbalance in China is not only a matter of how much investment each region receives. It also depends on whether the allocation of resources conforms to local industrial conditions and productivity potential. The literature on industrial evolution shows a regular path from agriculture to manufacturing to service industry [4, 6], while the mismatch literature shows that the distorted factor distribution will depress the total factor productivity [8, 9]. China's evidence links the two, because the state-owned bias in credit and capital enables low-productivity enterprises to survive and makes more productive activities lack investment [1, 14, 15], while the institutional friction between land and mobility locks the factors in low-return uses [11, 17]. Taken together, the literature points to two different forms of regional mismatch. Some eastern regions may have accumulated surplus factors in mature industries, but their innovation activities lack matching investment; many central and western regions may lose capital and skilled labor to the coast, and it is difficult to improve their own industrial base [12, 16]. Therefore, the core finding is that a single national allocation scheme is unlikely to correct the imbalance, because the mismatch faced by these two types of regions is opposite, and its root is the way in which factors are guided.

The second insight is that industrial structure and factor allocation should be treated together, because the lack of restructuring of matching factors will lead to the premature expansion of service industries in some coastal areas, while the upgrading of inland areas will stagnate. Therefore, this paper emphasizes that the allocation matching the stage is the key link between resource distribution and balanced growth [2, 13].

4.2 Differentiated Policy Countermeasures

The following suggestions regard the eastern region and the central and western regions as two categories. This is a simplified treatment, because there are still finer divisions in the middle, west and northeast, but these two categories grasp the main contrast between the industrialization stage and the direction of factor flow.

For the eastern region in the post-industrialization stage, the evidence of mismatch means that increasing input is not as useful as improving the use of input, because distorted allocation will reduce productivity [9, 16]. On this basis, this paper puts forward the support of competition neutrality, instead of directing more financial, credit and land investment to favored high-tech enterprises, because that would repeat the administrative allocation criticized above. The government can gradually withdraw its support for inefficient enterprises that have long relied on subsidies, alleviate overcapacity through market-oriented withdrawal, and invest more public expenditure in basic research, vocational training, shared R&D platform and intellectual property protection. Policy effectiveness should be measured by productivity, employment quality and innovation, not only by investment scale or output growth.

For the central and western regions in the early stage of industrialization, the focus should be on enhancing industrial capacity and improving local conditions, rather than forcibly leaving the factors in place. Policies should not hinder efficient labor mobility [12]. On the contrary, this paper proposes to narrow the artificial return gap by improving local productivity, public services, financing for efficient enterprises, logistics and education, so that skilled labor and capital are more willing to stay or return. In terms of industry, support can be invested in modern agriculture and deep processing, where secure land rights are crucial to efficiency [18], and can also be invested in digital and logistics infrastructure and manufacturing industries that match local resources and skills, and upgrade in stages instead of staying in low-value links for a long time. Place-based support should follow the comparative advantages of each region, rather than copying the structure of coastal areas [13, 19].

5. Discussion

5.1 Limitations of This Review

This paper adopts the method of structured narrative review, so it selects and sorts out influential theoretical and empirical studies, rather than applying formal system retrieval procedures. The selected literature is not exhaustive, and it is mainly taken from peer-reviewed research and working papers published in English, so some Chinese literature may not be fully covered. As a comprehensive work, this paper does not make regression or directly measure the mismatch loss. It also depends on the secondary research used, so the measurement bias in these studies may be transmitted to the conclusion of this paper. Some regional judgments are based on the interpretation of literature and rely on the results of provinces, so they should be regarded as the overall pattern, rather than the accurate assertion of each province [16].

5.2 Systematic Gaps in Existing Research

Throughout this literature, two gaps stand out. First, most studies regard industrial evolution and factor distortion as independent themes, lacking an integrated framework that combines the productivity logic of industrial upgrading and factor allocation to explain regional imbalances [6, 9]. Second, policy recommendations often adopt a unified national plan, and pay limited attention to the different stages of the eastern region and the central and western regions [2]. These gaps show the value of the integrated and differentiated perspective adopted in this paper.

5.3 Directions for Future Research

Future research can expand on this paper from many aspects. At the micro level, scholars can use the panel data of enterprises or households to measure the efficiency loss caused by the mismatch of factors in different industries and regions [17]. At the policy level, follow-up research should weigh the cost of differentiated allocation, such as financial pressure, the resurgence of local protection, and the risk of locking backward areas into low-value activities. A comparative study of other large developing countries can also test whether this logic of matching stages is also valid outside China.

6. Conclusion

This paper combs the classical theories of industry and growth, and integrates the research on resource allocation and regional disparity in recent years. The main analysis shows that the cross-regional imbalance in China is closely related to the mismatch of resources that are not suitable for the local industrialization stage. Under this interpretation, some eastern regions show excessive investment in traditional industries and insufficient support for innovation activities, while many central and western regions are faced with the outflow of skilled labor and capital and weak industrial capabilities. Matching the differentiated resource distribution with the industrial stage of each region is beneficial to correct the distorted layout and narrow the development gap. Theoretically, this paper constructs an integrated perspective that combines the law of industrial evolution with the logic of factor allocation efficiency. In practice, the phased and targeted allocation scheme provides an operable reference for national regional coordinated governance. The results indicate that policy makers should treat resource allocation and industrial upgrading as an interrelated task, and adjust their support according to the stage of each region, instead of applying a single national plan. They also show that focusing on the direction of allocation, not just the scale of investment, can provide a clearer basis for regional coordination policies.

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Conflicts of Interest

The authors declare no conflict of interest.

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