

Economic Law Perspectives on Industrial Clusters and Export Trade Structure Optimization in Liaoning

Jiaqi Bi*, Xiaonan Jia

Liaoning University of International Business and Economics, Dalian, Liaoning, China

**Corresponding author*

Keywords: Economic Law; Industrial Clusters; Export Trade Structure; Legal Frameworks; International Experiences

Abstract: This paper explores the role of economic law in optimizing industrial clusters and export trade structures in Liaoning Province, China. Liaoning, historically known for its heavy industries, faces challenges in upgrading its industrial base and diversifying its export portfolio. The study highlights the significance of economic law in shaping industrial policies, promoting innovation, and enhancing market regulation to foster sustainable economic growth. By examining the current state of Liaoning's industrial clusters and export trade structure, this paper identifies key issues such as product homogeneity, low added value, and over-reliance on specific markets. It then discusses the potential of economic law to address these challenges through financial incentives, intellectual property protections, and international trade policies. Case studies from Germany and Southeast Asia illustrate how legal frameworks have successfully optimized industrial and trade structures in other regions. The paper concludes by proposing strategies for Liaoning to further improve its economic legal environment, emphasizing the importance of fostering high-tech industries, innovation, and diversification in its export markets.

1. Introduction

1.1 Background and Significance

1.1.1 Current state of Liaoning's economic development and industrial clusters

Liaoning Province, located in the northeastern region of China, has long been recognized as a key player in the country's industrial development. Historically, it has served as a hub for heavy industries such as steel, machinery, and petrochemicals. The province boasts a robust industrial base supported by well-established infrastructure and a skilled labor force. Over the past decade, Liaoning has also witnessed the gradual emergence of new industrial clusters, including high-tech industries, equipment manufacturing, and renewable energy, which contribute to its economic diversification and resilience.

However, despite these advancements, Liaoning's industrial clusters still face notable challenges. Many clusters are concentrated in traditional industries with limited innovation capacity and insufficient integration into global value chains. Additionally, the uneven development of industrial clusters across the province has hindered the realization of their full economic potential. Addressing

these issues is crucial to ensuring sustainable growth and competitiveness on both the national and international fronts.

1.1.2 The urgency of optimizing the export trade structure

The export trade structure in Liaoning remains a critical factor influencing its economic performance. Currently, the province's exports are characterized by a heavy reliance on low-value-added products, such as raw materials and semi-finished goods, which makes it vulnerable to global market fluctuations. Moreover, the high concentration of export destinations, primarily within a limited number of markets, poses significant risks to trade stability and growth.

In the context of global economic shifts and intensifying trade competition, optimizing Liaoning's export trade structure has become increasingly urgent. A more diversified and value-driven export portfolio could not only enhance the province's resilience to external shocks but also align with China's broader strategic goals of upgrading its economic structure and promoting high-quality development. Leveraging economic law to facilitate this optimization—through policies that support innovation, fair trade, and industrial upgrading—presents a promising pathway for achieving these objectives.

This dual focus on industrial clusters and export trade structure optimization highlights the strategic importance of aligning regional strengths with global market demands, paving the way for Liaoning to enhance its position in the global economic landscape.

1.2 Research Objectives and Methods

This study aims to explore how economic law can optimize Liaoning's industrial clusters and export trade structure by addressing current challenges and promoting innovation, diversification, and competitiveness. Through a review of relevant laws, analysis of economic data, and case studies from successful regions, the research seeks to provide practical strategies for sustainable economic development in Liaoning.

2. Theoretical Foundations of Economic Law and Industrial Clusters

2.1 The Role of Economic Law in Industrial Policies and Market Regulation

Economic law serves as a foundational pillar for designing and implementing industrial policies and ensuring effective market regulation. In the context of industrial policies, economic law provides the legal framework for promoting targeted economic growth. It facilitates the allocation of resources to key industries through mechanisms such as tax incentives, financial subsidies, and regulatory reforms. By encouraging innovation and fostering industrial upgrading, economic law supports the development of competitive and sustainable industrial clusters.

In market regulation, economic law ensures fair competition and protects the rights of market participants. It achieves this through antitrust legislation to prevent monopolistic behaviors, intellectual property laws to safeguard innovation, and trade policies that ensure equitable market access. Additionally, economic law promotes transparency and accountability in business practices, creating a level playing field for enterprises. By integrating industrial policies with robust market regulation, economic law enables balanced economic development while fostering a stable and efficient marketplace [1].

2.2 Characteristics and Functions of Industrial Clusters: Agglomeration Effects, Innovation Capabilities, and Regional Competitiveness

Industrial clusters are geographical concentrations of interconnected businesses, suppliers, and institutions in a specific industry. These clusters exhibit several key characteristics and functions that contribute to regional economic growth and development.

One of the most significant characteristics of industrial clusters is the agglomeration effect, where businesses benefit from being located near one another. This proximity reduces transaction costs, facilitates easier access to resources, and enhances the flow of information. As firms cluster together, they can share specialized services, labor, and technologies, leading to increased efficiency and cost savings.

Industrial clusters also foster innovation capabilities by promoting collaboration between firms, research institutions, and universities. The close interaction between these entities encourages the exchange of knowledge, leading to technological advancements and the development of new products and services. This collaborative environment drives continuous innovation, making clusters more dynamic and adaptable to changing market demands [2].

Furthermore, industrial clusters enhance regional competitiveness by creating a specialized expertise and reputation that attract investment, skilled labor, and resources. The concentration of industry-specific knowledge and capabilities strengthens a region's competitive advantage both nationally and internationally. The collective strength of the cluster often leads to higher productivity and greater economic output, benefiting the region as a whole.

Overall, industrial clusters play a vital role in driving economic growth by leveraging agglomeration effects, fostering innovation, and enhancing regional competitiveness. Their functions contribute not only to the success of individual firms but also to the broader development of the region's economy.

3. Current Analysis of Liaoning's Industrial Clusters and Export Trade Structure

3.1 Overview of Liaoning's Major Industrial Clusters: Distribution of Manufacturing, Heavy Industry, and Emerging Industries

Liaoning Province, located in northeastern China, is a significant industrial hub with a diverse range of industrial clusters spanning traditional heavy industries and emerging sectors. These clusters have played a key role in the province's economic development and are essential to its future growth.

Historically, Liaoning has been known for its heavy industry clusters, particularly in steel, petrochemicals, and machinery manufacturing. Cities like Anshan, Dalian, and Fushun have long been centers for the production of steel, coal, and other raw materials that have supported China's industrial expansion. These heavy industries form the backbone of Liaoning's economy, providing employment and contributing significantly to its GDP. However, over the years, the reliance on traditional heavy industries has also revealed challenges such as environmental concerns, overcapacity, and a need for technological upgrading.

In addition to heavy industry, manufacturing has also been a dominant sector in Liaoning's industrial landscape. The province is home to a wide array of manufacturing clusters, including automobile production, electronics, and textiles. Dalian, for example, is recognized as a key manufacturing base for automobiles and high-tech equipment. Similarly, Shenyang has become a center for aerospace, high-precision machinery, and robotics. These manufacturing sectors have benefited from the integration of modern technologies, enhancing productivity and adding value to the province's exports.

In recent years, emerging industries have started to shape Liaoning's industrial clusters. The

provincial government has prioritized the development of new sectors such as high-tech industries, biotechnology, clean energy, and digital innovation. Cities like Dalian and Shenyang are gradually transitioning towards advanced manufacturing, digital technologies, and green energy, aiming to diversify the provincial economy and reduce its dependence on traditional industries. The development of these emerging industries is crucial for ensuring long-term economic sustainability and creating new growth drivers for the region [3, 4].

Overall, Liaoning's major industrial clusters are diverse, with a strong foundation in heavy industry and manufacturing, complemented by an ongoing shift toward emerging sectors. This transition is vital for the province's economic transformation and its ability to compete in an increasingly globalized and technology-driven economy.

3.2 Characteristics and Issues of Export Trade Structure: Product Homogeneity, Low Added Value, and Over-Concentration in Markets

Liaoning's export trade structure, while essential to its economic growth, faces several structural challenges that hinder its full potential. These challenges include product homogeneity, low added value, and over-concentration in specific markets, all of which contribute to the vulnerability and limited competitiveness of the province's exports.

One of the primary characteristics of Liaoning's export structure is product homogeneity, meaning that the province exports a high volume of similar products, particularly raw materials, minerals, and basic manufacturing goods. This lack of product diversity limits the ability to capture higher-value markets and restricts growth opportunities. Most of the products exported by Liaoning are not differentiated enough to command higher prices or cater to more advanced consumer needs.

Additionally, Liaoning's exports suffer from low added value, as many of the exported goods are in semi-finished or raw form, with limited processing or innovation involved. For instance, steel and coal—two of Liaoning's major exports—are sold with relatively little value-added processing compared to products such as high-tech equipment or finished goods. This reliance on low-value exports means that Liaoning misses out on higher profit margins and has limited control over global market prices.

Another significant issue is the over-concentration of exports in specific markets. A large proportion of Liaoning's exports are directed toward a small number of countries, especially within the Asia-Pacific region. This over-reliance on a few markets makes Liaoning's export trade vulnerable to external shocks, such as economic slowdowns or geopolitical tensions in these regions. Diversifying its export markets could help mitigate such risks and open up new opportunities for trade expansion [5].

These characteristics—product homogeneity, low added value, and market concentration—highlight the need for a structural shift in Liaoning's export trade. Moving towards higher-value products, diversifying export destinations, and encouraging innovation in export industries are crucial steps in enhancing the competitiveness and sustainability of the province's trade.

4. Role of Economic Law in Optimizing Industrial Clusters and Export Trade Structure

4.1 The Role of Economic Law in Enhancing Industrial Cluster Development

Economic law plays a vital role in optimizing industrial clusters by establishing the legal and regulatory frameworks that encourage growth and innovation. One of the key aspects of economic law in industrial cluster development is the formulation of policies that provide financial incentives, such as tax breaks and subsidies. These incentives make it more attractive for businesses to establish themselves within clusters, leading to greater concentration of industries and resources in specific

regions. Economic law also ensures the protection of intellectual property within these clusters, fostering innovation by securing the rights of creators and innovators. This legal protection boosts confidence and encourages further technological advancements within the cluster [5-7].

Moreover, economic law regulates fair competition within industrial clusters by preventing monopolistic behaviors and ensuring a level playing field. This is crucial for maintaining healthy competition, driving efficiency, and enhancing the overall competitiveness of the cluster. Through antitrust laws, economic law can curb anti-competitive practices that may hinder the growth of smaller businesses or newcomers within the cluster. This fosters an environment where businesses can thrive, collaborate, and innovate, ultimately contributing to the long-term sustainability of the industrial cluster.

4.2 The Role of Economic Law in Optimizing Export Trade Structure

Economic law is essential in optimizing the export trade structure by creating a legal framework that promotes diversification, reduces dependency on a few markets, and ensures the competitiveness of exported goods. Trade agreements and regulations under economic law provide the legal basis for accessing international markets and protecting export interests. By enforcing fair trade practices and resolving disputes, economic law creates a stable environment that encourages businesses to expand their export activities. Moreover, economic law facilitates the implementation of policies that support the upgrading of export products, enabling businesses to move beyond raw materials to higher-value, technologically advanced goods.

Additionally, economic law addresses barriers to international trade, such as tariffs and non-tariff measures, which can limit market access. Laws governing intellectual property protection, customs procedures, and trade facilitation mechanisms reduce friction in cross-border trade, making it easier for businesses to reach new markets. Economic law also promotes the adoption of standards that align with international norms, enhancing the quality and reputation of exported goods. This helps optimize the export trade structure by encouraging the export of diversified, value-added products and expanding market reach, ultimately improving the overall trade performance of the region.

5. Strategies for Optimizing Industrial Clusters and Export Trade Structure: Insights and Improvements for Liaoning

5.1 Successful Cases of Industrial Cluster and Trade Structure Optimization: Insights from Economic Law in Germany and Southeast Asia

Germany's Industry 4.0 is a strong example of how economic law can support industrial transformation through the integration of digital technologies into traditional industries. The German government has implemented a series of legal frameworks and policies that promote technological innovation and digitalization within industrial sectors. For instance, Germany has introduced incentive laws that encourage the adoption of smart technologies, automation, and digital manufacturing. These policies, supported by intellectual property protections and R&D tax credits, have made it easier for companies to innovate and integrate cutting-edge technologies into their operations. This legal support has played a key role in transforming Germany's industrial clusters into global leaders in high-tech manufacturing, enhancing both productivity and global competitiveness. Liaoning can draw valuable lessons from these economic laws by focusing on digital innovation and developing similar legal frameworks that foster the growth of high-tech industries.

Southeast Asia's success with industrial relocation offers another relevant example of how economic law can optimize trade and industrial structures. Countries such as Vietnam and Thailand have implemented foreign investment laws, including tax incentives, duty-free zones, and labor law

reforms, to attract foreign businesses and enhance the local industrial base. These legal frameworks have been essential in facilitating the shift of manufacturing from higher-cost regions to Southeast Asia, improving the region's export trade structures and industrial competitiveness. By offering legal incentives to multinational companies, these countries have attracted substantial foreign direct investment (FDI), which has resulted in the creation of competitive industrial clusters and a diversification of export markets. Liaoning could benefit from refining its investment-related economic laws and creating special economic zones or free trade areas that would encourage the relocation of advanced manufacturing sectors to the province.

Both examples illustrate the importance of economic law in shaping industrial policies, optimizing trade structures, and fostering competitive industrial clusters. By adopting similar economic legal frameworks, Liaoning can create a more attractive investment climate, foster innovation, and optimize its export trade structure to compete in the global market [8].

5.2 Improvements in Liaoning's Economic Legal Framework

Liaoning has made significant strides in improving its economic legal framework to support industrial cluster development and optimize its export trade structure. Through local legislative innovation and institutional reforms, the province has introduced various policies that enhance the business environment and foster economic growth.

One of the key components of these reforms is the streamlining of administrative processes. Liaoning has simplified business registration and approval procedures, reducing bureaucratic red tape and making it easier for businesses to operate, particularly in industrial clusters. This has been instrumental in attracting both domestic and foreign investments. In addition, tax incentives and subsidies have been tailored to emerging industries and innovative sectors, providing financial support to businesses that are transitioning towards higher-value production, such as high-tech manufacturing and green technologies. These legislative changes are designed to encourage investment in industrial clusters, helping to diversify the economy and reduce dependence on traditional sectors [9].

In terms of institutional reforms, Liaoning has worked on improving coordination between government agencies and industry regulators. This has resulted in more effective policy implementation, reducing delays and improving the regulatory environment for businesses. The province has also strengthened its enforcement of environmental regulations, offering incentives for companies to adopt sustainable practices. These reforms reflect Liaoning's commitment to balancing economic development with environmental responsibility.

By continually refining its economic legal framework, Liaoning is positioning itself for sustained economic growth. These improvements in local legislation and institutional structures are critical in creating a more favorable environment for industrial clusters, enhancing competitiveness, and facilitating the optimization of its export trade structure.

6. Conclusion and Outlook

6.1 Summary of Key Findings: Practical Implications of Economic Law in Industrial and Trade Optimization

This study emphasizes the importance of economic law in optimizing industrial clusters and export trade structures. Key findings show that economic law plays a critical role in shaping industrial development through tax incentives, subsidies, and environmental regulations, which help foster innovation, attract investment, and ensure sustainable growth.

Economic law facilitates the growth of industrial clusters by offering legal incentives that reduce

costs and promote high-tech and value-added industries. It also supports export trade by creating a stable environment for businesses, encouraging product diversification, and improving market competitiveness. These legal frameworks not only enhance industrial growth but also align with environmental goals, contributing to long-term economic stability and global competitiveness.

6.2 Future Outlook: Pathways for Further Optimization through Economic Law

Looking ahead, there are significant opportunities for further optimizing Liaoning's industrial clusters and export trade structures through continued advancements in economic law. Future efforts should focus on enhancing the legal framework to support emerging industries, particularly in green technologies and digital transformation. Strengthening intellectual property protections, improving access to international markets, and fostering innovation through legal reforms will be key to maintaining global competitiveness.

Additionally, economic law must continue to address the evolving challenges of sustainability. As environmental regulations become stricter globally, Liaoning can enhance its competitive edge by ensuring its industries meet international environmental standards. Continued institutional reforms will also be essential to streamline regulations and improve efficiency in trade and industrial development, ensuring that Liaoning remains an attractive destination for investment and a leader in industrial transformation. By aligning legal frameworks with future economic trends, Liaoning can create a more resilient and dynamic economy, paving the way for long-term growth and success.

Acknowledgements

Doctoral Research Initiation Fund Project at Liaoning University of International Business and Economics: Research on the Optimization of Liaoning's Export Trade Structure under the Collaborative Mechanism of Industrial Clusters (Project Number: 2024XJLXBSJJ001)

References

- [1] Yuwei Wang, Zhaobin Pei, and Huiwen Wang. "Research on the Rule of Law Construction in Liaoning Coastal Economic Belt". *Proceedings of the 3rd International Conference on Management, Economy and Law (ICMEL 2022)* Ed, 2022, 265-271.
- [2] Hengxu Zhang & Tongxin An. (2019). *Research on the Impact of China's Import and Export Trade on the Optimization and Adjustment of Industrial Structure*. (eds.) *Proceedings of 2019 International Conference on Politics, Economics and Management (ICPEM 2019)*, pp.272-276.
- [3] Le Wang, Xuan Wu & Qingman Li. (2017). *Research on industrial cluster development of Liaoning coastal economic belt*. In *Proceedings of the 2016 7th International Conference on Education, Management, Computer and Medicine (EMCM 2016)*, pp. 954-959.
- [4] Jianzhu Sun, Hong Zhao & Pengwu Zhang. (2014). *The Development Current Situation Evaluation of Industrial Cluster in Liaoning Province*. (eds.) *Proceedings of 2014 2nd International Conference on Social Science and Health (ICSSH 2014 V56)*, pp.254-257.
- [5] Meng Yue, Wu Jian. (2011). *The Impact of Industrial Cluster on Small and Medium-sized Enterprises Financing: Based on the Data of Liaoning and Zhejiang Province*. (eds.) *Proceedings of the Fifth International Symposium—The Development of Small and Medium-sized Enterprises*, pp.179-183.
- [6] QI Ying. (2011). *IACEED2010 Research on Environmental Issues during Port-economy Development in Yingkou of Liaoning*. *Energy Procedia (C)*, 2373-2377.
- [7] SHEN Enping (2006). *Technology And Innovation Performance Of Manufacturing Industry Clusters: Experience From Liaoning Province, China*. (eds.) *Proceedings of International Technology and Innovation Conference 2006*, pp.48.
- [8] Jie Yan & Qiannan Liu. (2024). *The Utility of "Industry 4.0" for Economic Development and Industrial Structure Change in Germany*. *Applied Mathematics and Nonlinear Sciences*, 3-11
- [9] Jingting Tang, Mohan Yang, Jiantao Jiang & Yanwen Huang. (2023). *Study on the synergistic effect of industrial structure differentiation of urban agglomeration in the Greater Bay Area*. (eds.) *Proceedings of 2023 6th International Conference on Humanities Education and Social Sciences (ICHESS 2023)*, pp.195-202.