

# Analysis of Talent Demand for Professional Settings in Free Trade Port Universities under the Background of Enclosed Operations

Yan Sun, Sumei Bi, Guohai Liu, Xiquan Chen

Hainan Tropical Ocean University, Sanya, Hainan, China

**Abstract:** The full customs closure operation of Hainan Free Trade Port is an important practice of institutional openness. This kind of exploration puts forward new requirements for university professional settings, such as "strategic embedding, industry frontier, and international rules", etc. This paper constructs an interdisciplinary analytical framework adapted to the customs closure scenario. Based on this framework, it sorts out the industrial directions derived from policy dividends such as "zero tariffs, low tax rates, and simple tax systems", and clarifies the core needs for talent scale, type, and knowledge structure in the next 5-10 years for key industries such as high-end commerce and trade, bonded maintenance, and new offshore international trade; providing theoretical basis and demand lists for subsequent dynamic adjustment mechanism design for professional settings.

**Keywords:** Customs closure operation; Free trade port; University professional setting

## 1. Introduction

The construction of the Hainan Free Trade Port is a strategic measure by our country to promote high-level institutional opening-up in the new era. According to the 'Master Plan for the Construction of Hainan Free Trade Port', the entire island will commence closed operations on December 18, 2025, signifying that China's largest free trade port is entering a new stage of development [1]. The regulatory system of 'opening up on the first line and control on the second line' will be implemented, and core policies such as 'zero tariffs, low tax rates, and simplified tax system' will begin to take effect. This institutional reform will reshape Hainan's industrial landscape and bring new challenges to the professional settings and talent cultivation in universities. The 'Hainan Free Trade Port "4+3+3" Key Industries Talent Demand Catalog (2025-2027)' has collected information on 432 positions, covering multiple different fields. The closure of customs has reshaped the existing talent supply and demand structure. The professional setting theories of traditional universities are based on the premise of a stable or gradually changing industrial environment, with the core being a linear matching logic. However, the closure of the free trade port has given rise to various new industries, and the current professional setting system exhibits problems of slow response and weak adaptability.

In this regard, this paper constructs an analytical framework covering four stages: "institutional input—industrial transformation—talent demand—educational response". The first stage is institutional input. The core systems of closed operation, including policies such as "zero tariffs, low tax rates, and simplified tax systems", can foster related industries. The second stage is industrial transformation. Institutional dividends can foster entirely new industries and promote the upgrading of existing industries, ultimately transforming into development momentum for industrial agglomeration. The third stage is the talent demand phase. New industries and new business formats impose "interdisciplinary" requirements on talent. The fourth stage is educational response. Universities adjust their existing professional settings according to demand. The speed and quality of the response determine the level of adaptation between education and industry.

## 2. The Reshaping Mechanism of Customs Closure Operations on Industry and Talent Demand

### (1) The Integrated Effect of "Zero Tariffs, Low Tax Rates, and a Simplified Tax System"

The core policies of customs closure operations can be summarized as "zero tariffs, low tax rates, and a simplified tax system." These three measures reinforce one another and together create a systemic catalytic effect on industry.

“Zero tariffs” means that after customs closure, goods trade between Hainan and most countries and regions in the world will be exempt from tariffs. This policy directly reduces the cost of imported raw materials, parts, and finished goods, creating conditions for the development of high-end commerce and trade (duty-free goods, luxury goods, and medical devices), bonded maintenance, remanufacturing, and aircraft and ship leasing industries. For example, if an aircraft is repaired in Hainan, the zero tariff on imported aviation materials can significantly reduce maintenance costs, thereby attracting global airlines to locate their maintenance operations in Hainan. In the first week after customs closure, offshore duty-free shopping reached RMB 1.1 billion, with 165,000 shoppers, representing year-on-year increases of 54.9% and 34.1%, respectively. The consumption-stimulating effect of the zero-tariff policy has thus begun to emerge.

“Low tax rates” are mainly reflected in preferential corporate income tax rates of 15 percent and personal income tax rates capped at 15 percent. This substantially reduces corporate operating costs and the tax burden on high-end talent, helping attract regional headquarters of multinational companies, offshore finance, and cross-border service trade industries. As of December 2025, 104 multinational enterprises had established regional headquarters in Hainan, and 77 companies from the Fortune Global 500 had set up operations there[2].

The “simplified tax system” streamlines the existing tax regime and explores reforms such as a sales tax. A simplified tax system reduces firms’ compliance costs and is especially beneficial to industries sensitive to the tax environment, such as the digital economy, platform economy, and cross-border e-commerce. In 2025, Hainan created 240,000 new jobs, with digital economy and healthcare-related sectors accounting for more than 40%, and average salaries were 32% higher than those in traditional service industries.

The integrated effect of these three policies is far greater than the sum of their individual effects. When zero tariffs reduce logistics costs, low tax rates reduce operating costs, and a simplified tax system lowers compliance costs, Hainan’s attractiveness to high-end manufacturing, international trade, and financial services will undergo a qualitative transformation. In terms of industrial structure, Hainan is moving from a “4+3” to a “4532” strategic upgrade, advancing along five major directions: “strengthening the province through agriculture, the ocean, aviation and aerospace, green development, and digital innovation.” A systemic restructuring of the industrial landscape is now unfolding.[3]

## (2) Key Industries and Talent Demand Characteristics Catalyzed by Customs Closure

In conjunction with Hainan Province's industrial development plan and the policy dividends brought about by customs closure, the following four industrial sectors are poised for high-speed growth and will become primary hubs for talent demand.

### 1) High-end Business and Trade

After Hainan completes its bonded port operations, the offshore duty-free policy will be integrated with bonded supervision requirements, and there is considerable room for expansion in the sales volume of duty-free goods in the region. The duty-free related industry is currently experiencing a shortage of talent for positions such as duty-free procurement managers and cross-border supply chain management. Core competencies required include international procurement negotiation and operational standards for customs special supervision zones. Since December 2025, the number of companies submitting registration consultations has surged, and the expansion of the scope of "zero tariff" goods has directly driven market demand for trade-related talent.

### 2) Bonded Maintenance and Remanufacturing

Under the support of zero-tariff policies, Hainan's construction of a global maintenance center possesses cost advantages. Bonded maintenance and remanufacturing businesses for products such as aircraft engines are poised to become new growth areas. Incoming aircraft for maintenance will not require security deposits, and imported components for maintenance will benefit from bonded preferential policies. This type of industry requires talent in engineering and technology, with core competencies for practitioners including familiarity with international maintenance standards. Haikou Comprehensive Bonded Zone has attracted multiple food processing enterprises, and the semiconductor industry has also reduced its production and operation costs through zero-tariff policies.

### 3) New Offshore International Trade

Hainan's simplified tax system and policies for the free and convenient flow of capital have attracted multinational corporations to establish offshore trade settlement centers locally. The core of

such trade involves the separation and integration of capital flows, requiring talent such as international settlement specialists. Core competencies include multi-currency settlement and exchange rate risk management. Hainan International Arbitration Court has a sufficient pool of arbitrators, and the demand for rule-based talent in the region is rapidly increasing.

#### 4) Aircraft and Ship Leasing

With the superimposed implementation of zero-tariff and income tax preferential policies, Hainan has become a preferred registration location for the aircraft and vessel leasing industries. The zero-tariff policy for aviation materials and fuel has brought benefits to aviation enterprises. These industries have a demand for financial engineering talents, whose core competencies include the management of assets throughout their entire lifecycle.

#### (3) Structural Change Characteristics of Talent Demand

Comparing the industrial landscape before and after the closure, the talent demand in the free trade port will undergo three types of structural adjustments in the next 5-10 years. First, the talent capability requirements will shift from 'single skill' to 'composite + internationalized'. In the past, most conventional positions required practitioners to master a single professional skill. After the closure operation, the recruitment preferences of enterprises have changed, and they are more willing to hire composite talents who are familiar with business content, understand international rules, can complete practical work, and carry out cross-cultural communication. Second, the talent adaptation requirements will shift from 'general type' to 'rule-sensitive type'. After the closure operation, a large number of new international rules will be integrated. Practitioners must be proficient in understanding and applying these rules; otherwise, daily business operations will be difficult to proceed normally. Third, the scope of talent recruitment will shift from 'local orientation' to 'global allocation'. After the closure operation, Hainan enterprises will participate more deeply in the global value chain, and practitioners need to have a global perspective and cross-cultural collaboration skills. Domestic enterprises urgently need high-end talents when deploying overseas businesses, and human resource service agencies are also actively transforming to build international service teams.

### 3. Talent Demand Forecast for the Next 5-10 Years

#### (1) Forecasting Methods and Data Sources

This paper constructs a combined scheme by integrating policy text analysis, the Delphi method, and the industrial employment elasticity coefficient method for forecasting. Initially, the "14th Five-Year Plan" and "15th Five-Year Plan" of Hainan Province, along with related policy documents, are compiled to extract quantitative development goals for each industry. Subsequently, 15 experts from government, academia, and industry participate in two rounds of Delphi consultation to independently assess and revise talent gaps. Finally, by referencing employment density data from similar industries nationwide or internationally, and considering the projected scale of Hainan's industries, the talent demand range is calculated.

By the end of 2024, Hainan's total employment reached 5.5142 million people, with the employment proportions of the primary, secondary, and tertiary industries reaching 30.1%, 11.1%, and 58.8%, respectively [4]. Compared to the 2023 data, the employment proportion of the tertiary industry slightly decreased, but the growth in positions within high-tech industries and modern service industries was substantial. In 2025, Hainan is projected to create 270,000 new jobs, with demand in fields such as smart cultural tourism and digital services, cross-border trade and digital logistics, artificial intelligence and information technology innovation, and healthcare accounting for over 40%, providing a reference for demand forecasting.

#### (2) Talent Demand Forecast by Industry

Based on the aforementioned methods, the talent gap for the four key industries was calculated (see Table 1).

*Table 1: Talent Shortage Forecast for Key Industries in Hainan Free Trade Port*

| Industry                               | Talent Shortage (Estimated) in 2025 | Talent Shortage (Estimated) in 2030 | Examples of High-Demand Positions                                                                    |
|----------------------------------------|-------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------|
| High-end Commercial Trade              | 8,000–12,000                        | 15,000–20,000                       | Duty-free procurement manager, cross-border customs affairs specialist, luxury operations manager    |
| Bonded Maintenance and Remanufacturing | 3,000–5,000                         | 8,000–10,000                        | Remanufacturing engineer, reverse logistics planner, maintenance compliance specialist               |
| New Offshore International Trade       | 2,000–4,000                         | 5,000–7,000                         | International settlement specialist, cross-border compliance officer, offshore trade product manager |
| Aviation and Ship Leasing              | 1,000–2,000                         | 3,000–4,000                         | Aircraft asset appraiser, cross-border tax advisor, leasing structure designer                       |
| Total                                  | 14,000–23,000                       | 31,000–41,000                       |                                                                                                      |

Note: Under the current cultivation scale of Hainan universities, the demand for newly added positions in this industry for the year cannot be met.

It is estimated that the cumulative talent gap in the four key industries will reach 30,000 to 40,000 by 2030. The total number of graduates from relevant majors in Hainan's local universities is limited, resulting in a significant gap. The gap in high-level and internationalized talent is relatively larger. There is an insufficient supply of talent in economics, trade, law, and finance who are familiar with international rules and possess cross-cultural communication skills. By 2025, the employment of graduates from universities such as Hainan University will be concentrated in the key development areas of the Free Trade Port. There is a mismatch between the skill structure of the local labor force and the needs of traditional industry transformation and upgrading, exhibiting a prominent characteristic of 'hot at both ends and cold in the middle'.

### (3) Implications for Professional Setting in Universities

1) Professional directions that need to be newly established or strengthened. It is recommended to add specialty tracks including International Economic and Trade Rules(Law Orientation), Customs Administration and Bonded Logistics, Cross-border Financial Services and Digital Trade. Local universities in Hainan are currently in a phase of dynamic adjustment of professional programs. Hainan Normal University has added an interdisciplinary program in artificial intelligence, which is highly compatible with the needs of the customs closure.

2) Traditional majors included in the scope of transformation. It is recommended that the International Trade and E-commerce majors supplement modules on offshore trade, new international trade settlement, and other content. The teaching content of the Financial Management major should be updated to include practical aspects of cross-border taxation and multi-currency accounting. The core of the transformation is 'customs-closure adaptation' — integrating the evolving rules under the customs closure into traditional courses.

3) Majors requiring early warning or adjustment. Some traditional general majors have had low employment rates for many consecutive years, which are significantly out of sync with industrial demands after the closure of the free trade port. For example, foreign language majors have not incorporated cross-border e-commerce practices, and accounting majors have not offered cross-border tax and accounting courses. For such majors, early warning procedures should be initiated to promote their transformation or gradual phasing out. Major adjustments should not be limited to adding new majors but should also focus on "optimizing existing ones". Hainan Normal University has cumulatively optimized 11 majors in the past three years, with an optimization rate of 16.9%, serving as a demonstration reference for other universities.[5]

## 4. Conclusion and Policy Recommendations

### (1) Main Conclusions

1) The sealed-off operation is not limited to simple adjustments in customs supervision; it is a

structural turning point that reverses the process, promoting the alignment of university majors with industry demands and achieving a new coupling between the two. The traditional unidirectional matching logic of "industry → major" has lost its efficacy. Institutional integration and innovation should be set as an exogenous reshaping variable. The sealed-off operation, in essence, belongs to institutional opening-up. After adjusting the efficiency of factor allocation and changing the market incentive structure, it generates a "structural reshaping demand" for human capital.

2) The key time window for advancing the adjustment of professional structure is 2025-2030. If the adjustment of professional layout is not completed in this stage, the contradiction between the explosive growth of industries after customs closure and the lag in talent supply will continue to expand. In the first week after customs closure, 1972 new foreign trade registered enterprises were added, a year-on-year increase of 2.3 times. The response speed of the industrial sector has far exceeded that of the education sector. Reducing the "time lag" is the most urgent task at present.

3) After the institutional integration effect of "zero tariffs, low tax rates, and simplified tax systems" is realized, it will drive the development of four key industries: high-end business, bonded maintenance, offshore trade, and aviation leasing, with an estimated cumulative talent gap of 30,000 to 40,000 by 2030. The current university major system can hardly produce a sufficient number of corresponding talents. After the customs closure, the economic outward orientation has improved, personnel movement has become more convenient, and the internationalization of the employment market has rapidly increased. Free trade ports will directly face competition in the international talent market.

## (2) Policy Recommendations for Dynamic Adjustment of Majors

First, establish a dynamic monitoring mechanism for industrial talent demand oriented towards sealed customs operations. It is recommended that the Provincial Department of Education, in conjunction with the Development and Reform Commission, the Department of Commerce, and key industrial parks, take the lead in releasing the "Key Industrial Talent Demand List for the Free Trade Port" annually. This list should specify the degree of scarcity and adjustment direction for each major, providing clear talent supply and demand signals to universities. The "Key Industrial Talent Demand Catalog for Hainan Free Trade Port '4+3+3' (2025-2027)" printed by the Hainan Provincial Government in April 2025<sup>4</sup> laid a good foundation for this work. It is recommended to build a normalized update mechanism based on existing achievements and incorporate it into the supporting measures system for sealed customs operations.

Second, a "green channel" for program establishment should be opened to promptly respond to the construction needs of emerging interdisciplinary fields spurred by the bonded port operations. For emerging areas such as bonded logistics, offshore trade, and cross-border compliance, competent authorities should initiate a rapid approval process, significantly compressing the time span from program argumentation to formal establishment, thereby aligning the pace of talent cultivation with the actual speed of industrial development. In the specific implementation phase, all universities should be encouraged to pilot with more flexible approaches. Pilot programs can be carried out through incremental steps such as establishing "micro-majors" or constructing dedicated "course modules" to accumulate experience and validate the feasibility of cultivation plans during actual operation. Hainan University has already taken the lead in exploration, establishing an effective closed-loop management mechanism for discipline and program adjustment that dynamically monitors needs, self-assesses cultivation quality, and dynamically optimizes program establishment. This mechanism simultaneously tracks external industrial development trends, regularly evaluates internal talent cultivation outcomes, and then flexibly adjusts program orientation and teaching content based on the results from both aspects. The scientific validity, adaptability, and operability of this model are relatively strong, and it can be promoted to other institutions of higher learning within the province as a general reference paradigm, simultaneously enhancing the responsiveness and service level of higher education in matching the construction of the free trade port.

Third, to carry out "closed-door transformation" for traditional majors. This paper suggests that the education authorities take the lead, in conjunction with the finance department and the free trade port management agency, to jointly establish a special support fund for educational and teaching reform. The use of these funds is fixed and specifically supports traditional advantageous majors closely related to economic activities after closed-door operation, such as international trade, logistics management, financial management, and law. The core path for the adjustment of existing majors is clear: to systematically integrate various knowledge modules unique to closed-door operation into the current professional curriculum framework. For the international trade major, new courses can be added on practical aspects of new customs clearance processes corresponding to zero-tariff policies, and special

modes and risk management of offshore trade; the training content for logistics management should focus on supplementing intelligent supply chain design related to international high-standard customs supervision requirements; for the financial management major, new knowledge points such as international tax planning and cross-border capital flow management can be included. Adopting this adjustment approach of using the existing professional framework and updating the core content does not require completely overturning the original professional training foundation, and can quickly complete the iteration and content expansion of the professional knowledge system.

When reforming the cultivation system, the inherent model of merely instilling single knowledge points in students cannot be followed. Emphasis should be placed on cultivating interdisciplinary and cross-field composite abilities, and promoting the integration of content such as "core professional skills + high-level foreign languages." This will enable students to communicate at a professional level and independently handle corresponding business in an international environment. It is necessary to promote the integration of content such as "in-depth professional technology + modern operational management." This will allow students to not only master frontline business operation methods but also possess comprehensive qualities in project management and strategic analysis. Advancing cultivation in this direction can lead to the targeted output of high-end composite talents who are familiar with international rules, deeply understand the characteristic institutional arrangements of free trade ports, and are competent in complex foreign-related businesses, thereby matching the urgent talent needs for the construction of free trade ports.

Fourth, establish a comprehensive professional warning and exit mechanism, constructing a management closed-loop that is dynamically adjustable and rigidly constrained. If a major has a situation where its training direction and curriculum are severely disconnected from the actual talent needs of closed-off operations for three consecutive years, and its graduate employment rate is continuously below 60% of the provincial average, the system will automatically trigger and strictly implement the 'yellow light warning—red light rectification—final exit and suspension of enrollment' mechanism. This mechanism relies on clear warnings and exit pressures to force higher education institutions to re-examine their major layouts and proactively and prospectively optimize their disciplinary and professional structures. Focusing on talent training models that closely align with the demands of closed-off operations and have high adaptability can enhance the employment competitiveness and quality of graduates, and is the core of achieving efficient allocation of educational resources. For majors that, after multiple rounds of warnings and rectifications, are still assessed as being unable to match the development needs of closed-off operations in the long term and have low training effectiveness, decisive measures must be taken to directly require their exit.

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