

The Mechanism of Rule Alignment between the Hainan Free Trade Port and ASEAN

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Abstract: Rule alignment between the Hainan Free Trade Port and ASEAN is a dynamic governance process in which different rule systems move from coexistence toward compatibility under conditions of institutional heterogeneity. Building on the conceptualization of rule alignment and the “institutional interface,” this paper constructs an analytical framework of “factor flows—actor coordination—institutional diffusion” from the perspectives of institutional complexity and cross-domain collaborative governance, and examines the practical forms of alignment in such fields as goods trade, investment and trade in services, personnel qualifications, and the digital economy. The study finds that cross-border factor flows continuously render institutional frictions visible and generate demands for alignment; multiple governance actors form rule connections through coordinated interaction; and functional platforms drive the diffusion of institutional innovation through pilot experimentation. Current problems include bias in demand identification, fragmentation of actor coordination, and insufficient transformation of pilot outcomes. The effectiveness of rule alignment should therefore be improved through demand feedback, tiered coordination, and evaluation-diffusion mechanisms.

Keywords: Hainan Free Trade Port; ASEAN; Rule Alignment

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1. Introduction

The report of the 20th CPC National Congress proposed steadily expanding institutional opening-up with regard to rules, regulations, management, and standards. As an important vehicle of China’s high-standard institutional opening-up, the policy focus of the Hainan Free Trade Port is shifting from the liberalization and facilitation of trade and investment toward institutional opening at the level of rules, regulations, management, and standards. The Master Plan for the Construction of the Hainan Free Trade Port explicitly calls for benchmarking against high-standard international economic and trade rules and for strengthening exchanges and cooperation with Southeast Asian countries; after the island-wide customs closure comes into operation, Hainan, as a special customs supervision area, will see its institutional interface with the outside world further highlighted. Meanwhile, Hainan has incorporated the transformation and alignment of standards with ASEAN and other RCEP members into its policy arrangements for the integration of domestic and foreign trade, marking the transition of rule alignment from a principled initiative into concrete institutional practice.

Yet deeper economic and trade ties do not mean that rules will naturally converge. ASEAN countries differ in market access, technical standards, inspection and certification, professional qualifications, and digital governance, while the Hainan Free Trade Port itself has developed opening-up policies and regulatory systems distinct from those of the mainland's general regions. This raises a question worth explaining: under persistently heterogeneous institutions, how do cross-border factor flows between Hainan and ASEAN translate into demands for rule alignment, and how do different governance actors transform institutional differences into compatible and operable rule connections?

Existing research has proceeded mainly in three directions: first, examining the institutional innovation and opening-up policies of the Hainan Free Trade Port; second, analyzing trade, investment, and regional cooperation under the China–ASEAN and RCEP frameworks; and third, discussing the alignment of rules, standards, and regulation against the backdrop of institutional opening-up. These studies provide an important foundation for understanding Hainan's opening toward ASEAN, but on the whole they still focus largely on rule content and on institutional differences themselves, lacking processual and mechanistic explanations of what demands generate rule alignment, through which actor interactions it proceeds, and how it ultimately forms stable institutional arrangements. In particular, rule differences may either raise transaction costs and create institutional barriers or, through sustained interaction, give rise to institutional learning and rule innovation; the conditions of this transformation leave room for further discussion.

Accordingly, this paper regards rule alignment as a dynamic process in which multiple actors jointly shape the institutional interface under institutional heterogeneity. It attempts to construct an analytical framework at three levels—cross-border factor flows, actor coordination, and institutional diffusion—to examine the practical forms, action logic, and practical obstacles of the Hainan Free Trade Port's rule alignment toward ASEAN, with the aim of moving from static comparison of rule differences toward an explanation of the generative mechanism of rule connectivity.

2. Theoretical Foundation and Analytical Framework

2.1 The Conceptual Connotation and Analytical Boundaries of Rule Alignment

Regional economic integration does not mean the natural disappearance of institutional differences between regions. As cross-regional flows of goods, capital, services, personnel, and data deepen, legal systems, regulatory rules, technical standards, and administrative procedures that originally belonged to different regions begin to enter the same economic activity, and institutional differences are transformed from a static existence into practical constraints on the efficiency of factor allocation. Zhong Yun and Hu Xiaohua point out that when regional cooperation develops from functional integration to deeper levels, reliance on market linkages alone is no longer sufficient to advance regional integration, and that institutional integration will become an important pathway for deepening regional cooperation^[1]. This judgment implies that rule alignment is not a subsidiary issue of regional cooperation, but an institutional demand arising once factor linkages reach a certain level.

Regarding the connotation of rule alignment, existing research has gradually moved beyond the understanding that equates it with the unification of legal rules. Wen Yajing was among the first to discuss rule alignment among different legal jurisdictions, proceeding from the practice of the Guangdong–Hong Kong–Macao Greater Bay Area^[2]; Shi Youqi, starting from the relationship between governance innovation and the rule of law, emphasized the significance of the alignment of soft law with hard law, as well as of pluralistic co-governance, for cross-regional governance^[3]. In recent years, Yang Aiping has further defined rule alignment along three dimensions—actors, fields, and pathways—noting that its practice is characterized by a growing number of actors, expanding fields, and diversifying pathways^[4]. Together, these studies show that rule alignment does not take the elimination of institutional differences as its premise; rather, it seeks coordination among different systems under the objective existence of differences.

Accordingly, this paper defines rule alignment as an institutionalized process in which different institutional actors, while maintaining their own basic institutional systems and regulatory authority, respond to institutional frictions arising from cross-regional economic and social activities—through rule coordination, procedure conversion, standard recognition, qualification mutual recognition, and information exchange—so as to enhance the compatibility among different rule systems. On this basis, three similar concepts need to be distinguished. First, rule alignment differs from rule unification: the former allows different systems to continue to coexist, whereas the latter places greater emphasis on the universal application of identical

norms. Second, rule alignment differs from one-way convergence (jiegui): convergence often takes the form of one party moving toward the other party's rules, while alignment places greater emphasis on interactive coordination among different actors. Third, rule alignment also differs from institutional convergence: institutional convergence concerns similarity after long-term evolution, whereas rule alignment mainly addresses whether rules can be mutually recognized and effectively converted in concrete economic activities.

Based on the above distinctions, this paper introduces the “institutional interface” as an analytical concept for observing the Hainan Free Trade Port's rule alignment toward ASEAN. The so-called institutional interface refers to a connection mechanism that enables cross-regional activities to be recognized, converted, and operated across different systems while the different rule systems remain relatively independent. Standard recognition, qualification mutual recognition, data exchange, regulatory cooperation, and even the joint formulation of rules in specific fields can all constitute different forms of institutional interface. The key to Hainan's rule alignment toward ASEAN therefore lies not in transforming different rules into a single rule, but in how to form connection modes capable of accommodating institutional differences.

2.2 The Theoretical Logic of Institutional Complexity and Cross-Domain Collaboration

That rule alignment becomes a governance problem requiring explanation stems, first of all, from the existence of institutional complexity. Reviewing research on institutional complexity, Deng Shaojun summarizes it along three dimensions—quantity, content, and time—emphasizing that organizations often face multiple, not entirely consistent institutional requirements simultaneously, and that different institutional logics may compete and conflict with one another or form dynamically adjusted relationships^[5]. Institutional complexity is therefore not equivalent to institutional chaos, but a structural state formed by the interaction of different institutional arrangements within the same action field.

This theoretical perspective has been gradually introduced into Chinese research on cross-regional rule governance. Chen Pengqin points out that rule alignment is characterized by institutional diversity, polycentricity, and nesting, and that interactions among different systems may produce fragmentation or, through institutional learning and institutional layering, generate coordinative outcomes^[6]. Its significance lies in shifting the research question from “whether institutional differences exist” to “what outcomes institutional differences produce and how they are governed.” The Hainan Free Trade Port faces similar problems in its alignment toward ASEAN. The Hainan Free Trade Port has its own opening-up institutional arrangements, while ASEAN member states maintain different rule systems in market access, industry regulation, technical standards, personnel qualifications, and digital governance. As cross-border activities increase, multiple rules move from relative separation into the same economic activity process, and institutional complexity thus becomes the basic structural condition confronting rule alignment.

However, institutional complexity can only explain why rule frictions arise; it cannot automatically explain why rule differences can be transformed into cooperation. There is no necessary logic of spontaneous convergence among different systems; whether they can form compatible relations depends on how actors respond to institutional differences. This is why research on cross-domain collaborative governance needs to enter the explanatory framework. Studying Guangdong–Macao cooperation, Sheng Li points out that cross-domain governance faces not only administrative boundaries but also multiple constraints including institutional differences, resource gaps, and actor identity, and that reducing institutional friction requires the formation of stable intergovernmental coordination and common-interest relations^[7].

In this sense, institutional complexity and cross-domain collaboration constitute two interconnected theoretical layers. Institutional complexity explains why coordination pressure arises after different rules enter a common field, while cross-domain collaboration explains how different actors respond to this pressure through organizational relations and institutional arrangements. Chen Pengqin's comparison of Qianhai, Hengqin, and Nansha also shows that the concrete forms of cross-domain governance are shaped by factors such as power–responsibility relations, interest relations, and functional positioning, and that major cooperation platforms can transform macro-level cooperation requirements into concrete institutional practice through differentiated governance means^[8]. This paper therefore does not treat institutional differences themselves as the endpoint of explanation for Hainan's rule alignment toward ASEAN, but further examines how institutional differences, through interactions among actors, form new rule relations.

2.3 The Analytical Framework and Operating Mechanism of Rule Alignment

Based on the above theoretical discussion, the Hainan Free Trade Port's rule alignment toward ASEAN can be understood as a process in which rule-compatible relations are gradually generated under conditions of institutional heterogeneity. Rather than mechanically applying any existing governance model, this paper draws on domestic research on institutional complexity, institutional integration, and cross-domain collaborative governance, and summarizes the rule alignment process into three interrelated analytical links: factor flows, actor coordination, and institutional diffusion.

First, cross-border factor flows constitute the realistic basis on which rule alignment occurs. When trade, investment, personnel, services, and data flows are small in scale, institutional differences can exist for a long time without generating strong coordination demands; as interactions deepen, different rules of origin, technical standards, market access conditions, professional qualifications, and regulatory procedures begin to act simultaneously on specific transactions, and institutional differences shift from a latent state to real costs. At this point, market actors' demand to reduce transaction costs overlaps with the government's requirement to improve opening-up facilitation, pushing rule issues onto the cooperation agenda. Factor flows are therefore not the direct result of rule alignment, but the basic driving force that renders institutional frictions visible and creates coordination demands.

Second, coordination among multiple actors is the key link in transforming rule demands into institutional arrangements. Rules do not align automatically simply because a real demand exists; central government departments, the Hainan local government and its functional platforms, ASEAN partners, and enterprises and industry organizations need to form sustained interactions around specific institutional issues. In this process, cooperation among actors is not an end in itself; it must be translated into concrete institutional relations through means such as standard comparison, procedure conversion, information sharing, unilateral recognition, and mutual recognition. Actor connectivity thereby becomes the organizational basis of rule connectivity. As interactions deepen, rule alignment may also evolve, from one party's active adaptation to the other party's rules, into higher levels such as mutual recognition and even the joint formation of specific rules.

Finally, institutional diffusion determines whether localized rule innovation can be transformed into stable institutions. Cross-regional institutional coordination often involves high uncertainty and adjustment costs, and thus is difficult to carry out simultaneously in all fields. Functional platforms such as major parks, ports, checkpoints, and industrial cooperation projects can carry rule experimentation within relatively clear governance boundaries and under policy authorization. Chen Pengqin's research on gradient rule alignment emphasizes that actor linkage, project linkage, and hierarchical linkage can transform institutional differences into institutional cooperation through concrete carriers^[9]; Yang Aiping also notes that major platforms play an important role in pluralistic institutional interaction and rule innovation. Institutional innovation therefore usually first takes shape in local scenarios, is continuously adjusted through practical feedback, and then expands to wider fields.

This paper thus forms an analytical framework of "factor flows—actor coordination—institutional diffusion": cross-border factor flows render institutional differences visible and generate demands for rule coordination; multiple actors construct institutional interfaces through interaction; and functional platforms and concrete projects promote the gradual stabilization and diffusion of localized rule innovation. The three are not mechanical linear stages, but a dynamic process of continuous feedback. The core logic is that institutional differences can themselves become either an obstacle to regional cooperation or, through actor coordination and institutional experimentation, a resource for institutional innovation. The essence of the Hainan Free Trade Port's rule alignment toward ASEAN is precisely the continuous construction of institutional interfaces, organizing originally dispersed rule relations into compatible institutional arrangements that support cross-border factor flows.

3. Practical Forms of the Hainan Free Trade Port's Rule Alignment toward ASEAN

3.1 Rule Alignment in Goods Trade

Goods trade is the field with the closest economic and trade ties between Hainan and ASEAN. ASEAN has remained Hainan's largest trading partner for many consecutive years. With the entry into force of the Regional Comprehensive Economic Partnership (RCEP), the scale of bilateral trade has continued to expand; demands for rule alignment first became visible in this field, and institutional supply is also relatively sufficient. In terms of tariff arrangements, the Hainan Free Trade

Port has successively issued three “zero-tariff” policy lists—for raw and auxiliary materials, means of transport and yachts, and self-use production equipment—exempting eligible imported goods from customs duties, import-stage value-added tax, and consumption tax; after the island-wide customs closure comes into operation in 2025, the customs supervision system of “first-line opening, second-line control, and free circulation within the island” will further reshape the rules governing goods flows between Hainan and the outside world. At the regional cooperation level, RCEP’s cumulation rules of origin and its customs procedures and trade facilitation provisions overlap with the Hainan Free Trade Port’s policies, providing a regional rule basis for goods trade between Hainan and ASEAN. In terms of customs clearance procedures, facilitation arrangements such as the international trade “Single Window” and “two-step declaration” have been gradually promoted, and Authorized Economic Operator (AEO) mutual recognition cooperation between Hainan and its major trading partners continues to expand. In terms of standards and certification, steady progress has been made in product standard comparison, mutual acceptance of inspection and testing results, and certification and accreditation cooperation in areas such as tropical agricultural products and aquatic products, reducing compliance costs for ASEAN goods entering the Hainan market. Overall, the field of goods trade has formed an alignment pattern characterized by “list-based policies, facilitated procedures, and comparable standards”; but it should also be noted that existing alignment arrangements are dominated by unilateral opening and procedural coordination, and substantial mutual recognition in inspection and quarantine standards and technical regulations remains to be improved. How the customs supervision rules after closure will achieve higher-level docking with the port rules of ASEAN countries will be a new issue confronting rule alignment in this field.

3.2 Rule Coordination in Investment and Trade in Services

Rule coordination in investment and trade in services centrally embodies the policy density of the Hainan Free Trade Port’s institutional opening-up, while also exposing the problem of unbalanced alignment between access rules and operation rules. In terms of market access, the Hainan Free Trade Port’s negative list for foreign investment is the shortest in China, and it has issued the country’s first negative list for cross-border trade in services, making opening arrangements in service sectors such as finance, shipping, tourism, medical care, and education that exceed China’s existing levels of commitment. In terms of enterprise establishment, institutional innovations such as the “commitment-based entry” system and “minimalist approval” have substantially reduced the institutional costs of market entry. In shipping services, the “China Yangpu Port” international ship registry policy, together with ship export tax rebates and port-of-departure tax rebates, has promoted the agglomeration of shipping factors in Hainan and created docking demands between Hainan’s ship registration and inspection rules and the shipping service rules of major ASEAN port cities. In tourism services, the visa-free entry policy for nationals of 59 countries including the ten ASEAN members, together with the offshore duty-free policy, constitutes an institutional interface for two-way flows of people and consumption. In medical services, the Boao Lecheng International Medical Tourism Pilot Zone’s policy on special access to imported drugs and medical devices and its pilot application of real-world data essentially establish localized docking between drug and device regulatory rules and the prevailing rules of ASEAN and the wider international community. In financial services, institutional arrangements such as the Qualified Foreign Limited Partner (QFLP), Qualified Domestic Limited Partner (QDLP), and multi-functional free trade accounts have promoted experimental opening of cross-border financial rules. It should be noted that a “rule gap” phenomenon worthy of attention exists in this field: the door at the market access stage has been opened, but regulatory rules, qualification requirements, and technical standards at the operation stage have not been coordinated simultaneously; market actors still face, to a certain extent, the hidden threshold of “access without permission to operate.” The markedly faster progress of investment access rule alignment relative to operation and supervision rule alignment constitutes the prominent obstacle to rule coordination in this field.

3.3 Personnel Mobility and Professional Qualification Mutual Recognition

As the scale of personnel exchanges between Hainan and ASEAN expands, personnel mobility and professional qualification mutual recognition have gradually become the field with the highest institutional threshold in rule alignment. In terms of personnel exchanges, the visa-free entry policy facilitates tourism and business travel by ASEAN nationals to Hainan; the route network between Hainan and major ASEAN cities continues to densify; and the “hard connectivity” conditions for personnel flows continue to improve. But whether people can enter is only one aspect of the problem; whether their

professional identities can be recognized by the other institutional system after entry is the essence of rule alignment in this field. In terms of professional qualifications, Hainan allows qualified overseas personnel to take professional qualification examinations and obtain corresponding qualifications in accordance with regulations, and has explored a unilateral recognition list system for overseas professional qualifications, achieving limited acceptance of professional qualifications from ASEAN countries in some fields. In terms of education accreditation, the Lingshui Li'an International Education Innovation Pilot Zone has introduced overseas high-level institutions to operate independently or in cooperation, and explorations of credit mutual recognition, curriculum articulation, and degree mutual recognition are gradually unfolding. In terms of medical practice, the Lecheng pilot zone allows overseas physicians to practice on a short-term basis in accordance with regulations, preliminarily opening a channel for the cross-border practice of professional service personnel. Overall, rule alignment in the field of personnel mobility still shows marked asymmetry: facilitation of personnel exchanges has progressed rapidly, whereas the scope of professional qualification mutual recognition is limited and at a low level, with unilateral recognition more common than two-way mutual recognition—especially in industries such as education and medical care that rely heavily on qualification endorsement. Whether professional identities can be recognized across borders essentially depends on the deep docking of education quality standards, practice supervision rules, and social security systems, which means that rule alignment in the field of personnel mobility will be a long-term, gradual institutional project.

3.4 Rule Coordination in the Digital Economy

The digital economy represents the frontier direction of the Hainan Free Trade Port's rule alignment toward ASEAN. In e-commerce, relying on cross-border e-commerce comprehensive pilot zones, Hainan is exploring cooperation models with ASEAN e-commerce platforms and the docking of cross-border retail supervision rules. In trade documentation, the application of electronic documents and electronic signatures, together with pilot programs for paperless trade, is changing the rule carriers of traditional cross-border trade. In digital identity, demands for mutual recognition of identity authentication for cross-border personnel and enterprises are increasingly apparent. In cross-border data, data is generally regarded as the most critical factor of production in the digital economy era; relying on Free Trade Port policies, Hainan is conducting institutional explorations of secure and orderly cross-border data flows, seeking a balance between data security and data flows. In digital trade rules, Hainan has set the goal of docking with high-standard economic and trade rules such as the Digital Economy Partnership Agreement (DEPA), and new rule issues such as data rights confirmation, the validity of electronic contracts, and consumer rights protection are beginning to enter the horizon of institutional innovation. Objectively speaking, rule alignment in this field is still at an initial stage: existing rule supply mostly remains at the level of pilot exploration, and there is evident tension between the incompleteness of the rule system and the rapid development of digital economic and trade practice; the sensitivity and complexity of cross-border data flow rules also make the alignment process in this field highly dependent on institutional authorization at the national level. But precisely for this reason, the digital economy is the field most likely to become the breakthrough point at which Hainan's rule alignment toward ASEAN moves from "follow-on docking" to "joint rule-making."

4. The Action Logic of the Hainan Free Trade Port's Rule Alignment toward ASEAN

4.1 Cross-Border Factor Flows and the Generation of Rule Demands

Rule differences do not necessarily generate alignment demands by themselves. Legal systems, regulatory approaches, and technical standards have long differed across countries and regions, and when cross-border ties are weak, various rules can operate within relatively independent institutional spaces. Only when goods, capital, personnel, services, and data continuously cross institutional boundaries—so that the same transaction is simultaneously subject to different rule systems—do originally static institutional differences transform into directly perceptible institutional frictions. The regional rules formed by RCEP in such areas as customs procedures, trade in services, investment, movement of natural persons, and digital trade overlap considerably with the Hainan Free Trade Port's liberalization and facilitation institutions, and have also moved Hainan's opening toward ASEAN from the expansion of market opportunities further into the stage of rule application and institutional coordination.

This demand generation first appears as the "rendering visible" of institutional boundaries by cross-border flows. After

the scale of goods trade expands, enterprises face not only tariff levels but also origin determination, technical standards, inspection and certification, and customs clearance procedures; after service trade access is liberalized, operation qualifications, industry regulation, and fund settlement are further implicated; the mobility of professionals involves qualification recognition and practice licensing; and as digital trade deepens, cross-border data flows, electronic certification, and personal information protection become new institutional interfaces. Thus, the deeper factor flows go, the more easily rule differences shift from institutional background to real transaction costs, and reducing institutional friction correspondingly shifts from a general opening-up appeal to concrete demands for rule alignment.

This process is markedly progressive. Rule alignment at the initial stage tends to concentrate on reducing the visible costs formed by border measures; as cooperation extends to industrial chains, service chains, and digital chains, institutional demands gradually shift to “behind-the-border” regulation. Cooperation between Hainan and ASEAN therefore does not begin with a complete rule alignment plan to which market actors passively adapt; rather, actual cross-border activities continuously raise new institutional problems, prompting rule supply to respond. Hainan’s efforts to strengthen standard transformation and alignment with ASEAN and other RCEP members, as well as to promote the localized adaptation of international economic and trade rules within institutional opening-up, precisely reflect the reverse shaping of rule supply by opening-up practice.

The starting point of rule alignment is therefore not institutional convergence, but real problems arising from cross-border interactions. Flows of goods, services, personnel, and data in effect constitute a continuous institutional stress test: where existing rules can support cross-border activities, institutional differences can continue to coexist; when rule conflicts lead to duplicate certification, market entry difficulties, or increased regulatory costs, demands for institutional coordination intensify accordingly. Cross-border factor flows are thus not only the object served by rule alignment, but also an important force driving rule adjustment, forming an internal chain of “factor flows—institutional frictions—alignment demands.”

4.2 Multiple Actors and the Formation of Rule Connections

The generation of institutional demand is only a necessary condition for rule alignment. Rules correspond to the allocation of powers among different levels of government, the functional boundaries of different regulatory departments, and the interest claims of market actors; a single actor can hardly complete cross-system coordination on its own. Hainan’s rule alignment toward ASEAN therefore presents itself as an institutional construction process jointly participated in by multi-level, multi-departmental, and multi-type actors, the key to which is not simply increasing the number of participants, but whether cooperative relations among actors can be transformed into stable rule relations.

Viewed vertically, the Hainan Free Trade Port exhibits a clear combination of national authorization and local experimentation. Matters such as tariffs, customs, finance, data security, and the fulfillment of international economic and trade agreements have strong national-authority attributes, and Hainan’s local institutional innovation must unfold within national laws and the overall opening-up framework; the local government and its functional departments, meanwhile, undertake functions such as policy refinement, rule implementation, and institutional feedback. The Regulations on Foreign Investment in the Hainan Free Trade Port, which took effect in 2025, on the one hand explicitly expand institutional opening-up with regard to rules, regulations, management, and standards, and on the other hand establish a service and coordination mechanism for foreign investment projects and encourage key parks to conduct pioneering trials in fields such as international cooperation, medical care, education, and cross-border trade in services according to their industrial characteristics, thereby forming a vertical relationship in which national institutional supply, local policy conversion, and platform innovation connect with one another. Viewed horizontally, Hainan’s rule alignment toward ASEAN goes beyond the boundaries of a single administrative region and a single department. The same cross-border matter may simultaneously involve departments of commerce, customs, market regulation, finance, transport, health, and cyberspace administration, and it also requires corresponding institutional responses from the institutions of ASEAN partners. Technical standards can be made compatible through comparison, but whether certification results can be mutually recognized also depends on trust between regulatory agencies; professional qualifications can be given conversion procedures, but whether practice is ultimately permitted still involves industry supervisory departments; cross-border data procedures can be simplified, but only on the premise that risk identification and

regulatory responsibilities can be effectively implemented. The essence of rule connectivity is therefore the re-establishment of collaborative relations among different governance authorities around the same cross-border matter.

Market actors also constitute an indispensable source of information in the process of rule coordination. Enterprises, industry associations, and professional institutions stand at the front line of actual rule operation; whether institutional duplication, conflict, and gaps exist often first manifests as enterprises' transaction costs. Hainan's institutional opening-up is shifting from factor opening-up characterized mainly by policy supply toward systematic governance that attaches greater importance to identifying institutional gaps, pluralistic participation, and resource integration. Enterprise feedback is therefore not subsidiary information after institutional implementation, but should enter the rule formation process, enabling intergovernmental coordination to respond more accurately to real cross-border needs.

Actor linkage ultimately needs to settle into rule linkage. Its basic forms can be expressed as three levels from shallow to deep: first, unilateral adaptation, in which one party adjusts its own procedures to improve compatibility with external rules; second, mutual recognition, which reduces duplicated institutional costs through mutual recognition of standards, qualifications, certificates, or regulatory results; and third, at a higher level, the joint formation in specific fields of operational norms acceptable to both parties. The three do not necessarily evolve in sequence, but together they show that only when actor coordination is transformed into sustainably operating institutional interfaces can the shift from "cooperative relations" to "rule relations" be truly completed.

4.3 Functional Platform Experimentation and the Institutional Diffusion of Rules

Cross-border rule coordination involves high institutional costs and uncertainty, and different rules implicate regulatory security, industry interests, and governance authority; it is therefore difficult to carry out across-the-board adjustment simultaneously in all fields. As a space for reform and opening-up experimentation, the Hainan Free Trade Port's institutional innovation does not pursue one-off rule reconstruction, but emphasizes trial, adjustment, and replication within a limited scope. A basic feature long formed in institutional innovation in pilot free trade zones is to place reform items in specific spaces and scenarios for pioneering trials first, followed by adaptive adjustment and replication promotion according to operational results.

Key parks, ports, checkpoints, and specific industrial projects thus become important institutional carriers for rule alignment toward ASEAN. These functional platforms not only undertake industrial agglomeration and project landing functions, but can also convert the highly abstract "docking with international rules" into governance matters with relatively clear boundaries. For example, rather than directly promoting qualification mutual recognition covering all industries, it is preferable to first explore qualification conversion in fields with strong cross-border service demand such as medical care and tourism; rather than discussing free data flows in general terms, it is preferable to conduct classified trials according to specific industries, data types, and application scenarios. By confining complex problems within certain spatial, industrial, and actor boundaries, the coordination costs of rule adjustment can be reduced, and it also becomes easier to identify the risks that institutional innovation may generate.

The role of functional platforms therefore has a clear "institutional buffer" feature. On the one hand, it allows existing institutions to accommodate new rule arrangements while remaining generally stable, avoiding the uncertainty brought by excessively broad institutional adjustment; on the other hand, it tests whether rule interfaces can operate effectively through actual enterprise use, departmental supervision, and partner feedback. Hainan's foreign investment system has already explicitly encouraged key parks to conduct pioneering trials in fields such as international cooperation and cross-border trade in services according to their industrial characteristics, giving parks the possibility of extending from industrial carrying spaces into institutional experimentation spaces.

But localized experimentation constitutes complete rule alignment only when transformed into replicable institutional arrangements. Institutional innovation in pilot free trade zones has already exhibited features of continuously expanding coverage, rising integration, and replication from local experience to multiple levels. Hainan's rule adjustment after closure can likewise be expressed as a dynamic process of "opening-up pressure identification—localized rule adjustment—reform pilot promotion." The value of pilots therefore lies not in how many isolated innovation cases are formed, but in whether

effective local rules can be converted—through policy evaluation, market feedback, and institutional correction—into stable, universal, and sustainable institutional supply.

From this logic, Hainan's rule alignment toward ASEAN has actually formed a path of institutional diffusion from "projects" to "rules" and from the "local" to the "overall." Specific projects first expose institutional problems; functional platforms provide space for rule experimentation; operational results enter policy adjustment after evaluation; mature institutions are then gradually extended to other parks, industries, or the whole island; and among them, institutional experience with regional cooperation value may further enter higher-level rule coordination between Hainan and ASEAN. Institutional diffusion is therefore not simple replication, but an institutional learning process accompanied by adaptive adjustment and recombination.

5. Practical Obstacles to the Hainan Free Trade Port's Rule Alignment toward ASEAN and Adjustment Strategies

5.1 Supply–Demand Mismatch in the Identification of Rule Demands

Rule alignment first faces the question of whether institutional supply can effectively match actual demand. Hainan's institutional opening toward ASEAN has a strong policy-driven character; institutional arrangements such as RCEP, the Free Trade Port Law, and the negative lists provide the basic framework for flows of goods, services, investment, and personnel, but macro rules cannot exhaust the concrete obstacles in enterprises' cross-border operations. Issues such as certificates of origin, testing and certification, professional qualifications, and cross-border data have evident industry- and scenario-specific characteristics, and the applicable conditions of the same rule differ across ASEAN markets. If rule alignment proceeds mainly according to established catalogs and departmental functions, there may arise a phenomenon in which institutional supply continues to expand while the "small-cut" problems that market actors really need solved enter the policy process insufficiently. Institutional opening-up after closure also faces the question of how "beyond-list demands" enter the institutional innovation process, requiring further improvement in the ability to identify institutional gaps and respond to demands.

Hainan's current cross-border trade in services management system already requires that, when formulating local regulations and normative documents concerning overseas service providers, the opinions of overseas service providers and chambers of commerce be solicited, and it has established statistical monitoring, third-party evaluation, and negative list adjustment mechanisms, providing an institutional basis for demand feedback. But rule alignment toward ASEAN should further shift from general opinion solicitation to normalized demand identification. Dynamic lists of rule obstacles could be established for industries with close Hainan–ASEAN economic and trade ties, classifying enterprises' concrete problems in customs clearance, certification, access, practice, and data flows by frequency of occurrence, transaction cost, and coordination difficulty; stable information feedback channels could be formed relying on chambers of commerce, key parks, and professional service institutions, transforming market actors' dispersed claims into rule topics that can enter intergovernmental coordination. On this basis, alignment priorities could be set according to rule maturity and actual demand, shifting institutional innovation from macro policy supply toward problem-oriented precise supply, and forming a demand generation mechanism of "cross-border activities identify problems—market actors express demands—governance departments screen topics."

5.2 Relational Fragmentation in Multi-Actor Coordination

The second constraint on rule alignment comes from the tension between the growing number of governance actors and insufficient coordination capacity. Hainan's rule matters toward ASEAN span customs, commerce, market regulation, finance, health, education, cyberspace administration, and other fields; some matters fall under national authority, some require Hainan's local adjustment of laws and regulations and policy refinement, and still others must obtain the recognition of ASEAN partners' corresponding regulatory agencies. Rule alignment is therefore not a single department's administrative affair, but a compound governance process in which vertical intergovernmental relations, horizontal departmental relations, and transnational regulatory relations are interwoven at the same time. The more participants there are, the higher the costs of information transmission, power–responsibility allocation, and interest coordination; if different departments conduct cooperation separately around their own functions, dispersed channels and insufficient policy coordination may also result.

Hainan's remaining institutional needs for further coordination in data interoperability, regulatory standards, and cross-domain enforcement under closure conditions also reflect the internal tension between departmental segmentation and holistic governance under high-standard opening-up.

Existing institutions have formed a certain basis for horizontal coordination. For example, the negative list for cross-border trade in services is coordinated by the provincial joint conference on innovation and development of trade in services; the commerce department is responsible for implementation and operational monitoring; industry supervisory departments bear opening-up and regulatory responsibilities in their respective fields; and cross-departmental data sharing, information notification, and work coordination mechanisms have been established. Building on this, rule alignment toward ASEAN should further form tiered linkage relations: for matters involving international agreement obligations, national legislation, and major regulatory authority, institutional boundary problems should be resolved through national-level authorization and coordination; for matters with strong professional attributes such as standards, qualifications, and certification, Hainan's corresponding supervisory departments should establish relatively stable professional interfaces with ASEAN partners; and for concrete industrial and project problems, reliance should be placed more on consultation involving key parks, industry organizations, and enterprises. Through vertical authorization and feedback, horizontal departmental coordination, and government–enterprise information interaction, multi-headed participation can be transformed into a governance network with a clear division of labor. At the same time, docking should be classified according to different ASEAN countries' institutional conditions and the focus of Hainan's industrial cooperation, so that actor relations match concrete alignment matters.

5.3 Transformation Obstacles in the Diffusion of Institutional Experimentation

The Hainan Free Trade Port enjoys the institutional advantage of pioneering trials, but localized innovation does not necessarily produce institutional diffusion. Rule experimentation usually occurs in key parks, specific industries, and limited scenarios; its advantage lies in controlling reform costs and risks, but it also easily takes on project-based, fragmented characteristics. If institutional innovation manifests more as breakthroughs in individual cases, lacking cross-departmental evaluation, rule consolidation, and experience conversion, pilot results may remain confined to particular actors and particular scenarios, making it difficult to form stable institutional supply. For the Free Trade Port to move from “factor opening-up” to “institutional opening-up,” the key is no longer merely increasing the number of innovation items, but strengthening the integration among institutional supplies and the reverse effect of performance feedback on institutional adjustment^[1]. Rule adjustment after closure also needs to undergo stress testing, localized adjustment, and experience promotion before the conversion from absorption of external rules to internal institutional innovation can be completed^[3].

Rule experimentation toward ASEAN also faces a more special two-way transformation problem. Hainan's unilateral simplification of procedures, expanded recognition of overseas qualifications, or optimized cross-border data management can raise its own degree of institutional openness, but does not automatically obtain reciprocal recognition from ASEAN partners. Rule innovation can become a cross-border institutional interface only when it can enter both parties' regulatory systems. Whether pilot projects possess external compatibility should therefore be incorporated into the evaluation of institutional innovation; at the initial pilot stage, domestic legal bases, ASEAN partners' rules, market actors' usage costs, and regulatory risks should be examined simultaneously. For mature projects, the stability of rule relations can be enhanced through forms such as standard mutual recognition, memoranda of cooperation, and departmental agreements; for fields where institutional differences remain large, room for localized experimentation and dynamic adjustment should be preserved, and rapid replication should not be simply pursued.

The current cross-border trade in services system already provides for third-party evaluation of the implementation of the negative list, on the basis of which adjustment suggestions may be submitted to the national level, providing a realistic basis for “experimentation—feedback—adjustment.” At the next stage, this evaluation approach can be further extended to rule alignment projects toward ASEAN, establishing an evaluation mechanism with the joint participation of government departments, parks, enterprises, and professional institutions, and conducting dynamic testing of institutional usage rates, transaction cost changes, partners' degree of recognition, and risk control effects. Mature experience can diffuse from specific

projects to similar industries, and then from park practice to whole-island institutions; arrangements with cross-regional universality can enter regional cooperation frameworks through higher-level coordination. This will promote rule alignment's shift from pursuing "the number of pilots" toward improving "institutional transformation capacity," making pioneering trials a true starting point rather than the endpoint of institutional diffusion.

6. Conclusion

This paper has examined the mechanism of rule alignment between the Hainan Free Trade Port and ASEAN. Treating rule alignment as a dynamic governance process in which multiple actors jointly shape institutional interfaces under institutional heterogeneity, the study constructed an analytical framework of "factor flows—actor coordination—institutional diffusion" and applied it to the fields of goods trade, investment and trade in services, personnel mobility, and the digital economy. The analysis shows that cross-border factor flows render institutional frictions visible and generate alignment demands; multiple governance actors transform these demands into rule connections through standard comparison, procedure conversion, information sharing, and mutual recognition; and functional platforms promote the diffusion of institutional innovation through pilot experimentation and evaluation. At the same time, rule alignment still faces obstacles, including supply–demand mismatch in the identification of rule demands, relational fragmentation in multi-actor coordination, and insufficient transformation of institutional experimentation. To improve the effectiveness of rule alignment, Hainan should establish normalized demand feedback mechanisms, build tiered coordination networks that match actor relations to concrete alignment matters, and strengthen the evaluation and diffusion of institutional experimentation, so that pioneering trials become the starting point of stable, universal, and sustainable institutional supply rather than their endpoint. In this way, the Hainan Free Trade Port can steadily advance from static coexistence with ASEAN rules toward a compatible institutional arrangement that supports cross-border factor flows.

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