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The Dynamic Evolution Study of Trade and Investment Integration Based on System Perspective

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Abstract: For nearly 30 years, China's foreign trade and foreign direct investment has made rapid development. This study use the system point of view to construct a trade and investment integration system, defines the connotation and characteristics of trade and investment integration system, analyzing the main body of the trade and investment integration system based on the collaborative perspective, builds competitive co-evolution model and cooperation co-evolution model of foreign trade and investment, explores the dynamic evolution and operation mechanism of the trade and investment integration system. The conclusion is that both competition and synergy promote the development of the integration of trade and investment.

Key words: Trade and investment integration system, synergy evolution model, dynamics analysis, operation mechanism

INTRODUCTION

Foreign trade and foreign direct investment theory research mostly focused on the following two questions, one is that the relationship of foreign trade and foreign direct investment is alternative or complementary; another is that foreign trade promotes the development of foreign direct investment or foreign direct investment promotes the development of foreign trade. Relevant empirical research is mostly focused on the above two questions, the research of the trade and investment integration is little; the research of it from the angle of system is lesser.

Mundell (1957) put forward trade and investment substitution model, his conclusion is that the trade and investment replace each other. Markusen (1983) and Svensson (1996) reveals the relationship between trade in goods and elements flow by using elements proportion model, the relation of them is alternative or complementary. Bhagwati *et al.* (1987) and Dinopoulos and Bhagwati (1986) put forward compensation investment model; he believed that investment is a kind of complement of trade.

After the 90s, the studies of trade and investment integration gradually increase. Brainard (1997) Built a general equilibrium model of domestic enterprises and horizontal multinational enterprises to analyze trade and

investment integration based the theory of industry inner trade Helpman and Krugman (1985) model and oil multinationals theory model (Dunning, 1980). Markusen (1983) builded the general equilibrium model of horizontal multinational enterprise to analyze integration of trade and investment on the base of differentiated products, monopolistic competition and increasing return to scale. Chinese scholars Zhang *et al.* (2004) studied the trade and investment integration, the conclusion is that trade and investment integration is an International economic phenomena of trade and investment highly integrated, interdependent ,symbiotic development and integration as a whole.

Hammer's the monopoly advantage theory (Hymer, 1976), Vernon's product life cycle theory (Vernon, 1996), Barclays and Carson's internalization theory (Buckley and Casson, 1976), Kojima's marginal industry expansion theory (Kojima, 1978) and Dunning's international production compromise theory, etc., these theory thoroughly expound the driving behavior of multinational companies' trade and investment integration.

In the empirical research, study of Head and Ries (1997) and Lu (2007) shows that trade lead to foreign direct investment. Zhang (2008) found the different types of foreign direct investment plays a different role in the development of export.

TRADE AND INVESTMENT INTEGRATION SYSTEM CONTENT AND CHARACTERISTICS

Trade and investment integration is a resource's reorganization and interests expand dynamic running process of foreign trade and investment; it has characteristics of integration symbiotic, mutually dependent and mutually reinforcing. It is an evolutionary process rather than just a result. From synergy perspective, trade and investment integration refers to the competition, coordination and cooperation relations between the two subsystems; it is a process or ability to promote the formation and development of trade and investment integration through the operation mechanism.

Trade and investment integration system belongs to the category of the economic system; it is a nonlinear system with dynamic behavior characteristics of complex and composed by the foreign trade and investment subsystems. Trade and investment depends on and coordinate each other within the same subject to maximize the overall revenue of the integration of trade and investment.

The openness: The foreign trade and investment subsystems have competitive and cooperative, prompt trade and investment integration system from order to disorder. It is a typical open system structure and is affected by domestic and foreign policies, industry status and the influence of corporate behavior deeply.

The imbalance: The two subsystems are uniform when the trade and investment integration system is in a state of imbalance. Differences between them are obvious and mainly reflected in five aspects of the scale, structure, main body, policy and the location.

Nonlinearity: Nonlinearity is the main basis of orderly structure to exist of trade and investment integration system. The result of the interaction between different components in system is not equal to simple accumulation of all the elements, the overall effect of the system and the effect of the sum of the elements cannot be determined, it is decided by the specific mechanism of all the elements of integration system.

Dynamic: Trade and investment integration system is developed in the process of collision and fusion of the two subsystems in foreign trade and investment. It evolves along with international market environment changing. Trade and investment integration system is a process of quantitative change accumulation to a qualitative leap, constantly promote the integration system in the dynamic evolution stage to higher level.

Fluctuation: Fluctuation is conducive to the coordinated development of foreign trade and investment, trade and investment integration system has been change, foreign trade and investment constitute a "fluctuation". Foreign trade and investment are unrelated at the beginning, then collide with each other, mutually reinforce, fusion symbiosis and synergetic development. The inertia of trade and investment integration is broken when there are external motivation and interference, it encourage trade and investment integration turn to conducive to the interests of the state, the industrial structure upgrade and enterprise development, fluctuation is conducive to the synergetic development of foreign trade and investment.

THE STRUCTURE OF TRADE AND INVESTMENT INTEGRATION SYSTEM

Behavioral agent: Country is macro subject and enterprise is the micro subject of trade and investment integration. Country and enterprise promote the synergy of foreign trade and investment and obtain the overall benefit maximization.

Country put forward foreign trade and investment policies to guide and standardize the development of foreign trade and investment. The policy of different country is not the same, foreign trade and investment are alternative or complementary relationship is different in different stages. The impact of Investment on trade is dynamic, but the overall trend is positive. Policies promote the coordinated development of foreign trade and investment.

Enterprises, especially multinational companies are the micro main body of trade and investment integration, they are the main body of carrying forward foreign trade and investment cooperation; it dominates the development of foreign trade and investment. Trade and investment integration is the activities of multinational companies to configure resource world-wide. Elements of international liquidity enhancement make an enterprises cannot enjoy its comparative advantage of their own resources endowment. Competitive enterprises use domestic and foreign economic resources by trade and investment.

The system structure: Trade and investment integration system based on synergetic perspective consist two subsystems, two levels and five key elements. Two subsystems are subsystems of foreign trade and Foreign Direct Investment (FDI) subsystem.

Two levels refer to the macro and micro, both of them play an important role in the synergetic development of trade and investment. Synergy of foreign trade and investment is affected by the stage of economic

development, national policy, the element division, the enterprise core competitiveness and industry cluster. There are competitions and cooperation between foreign trade and investment, they promote the formation and development of trade and investment integration through dynamic mechanism, integration mechanism and feedback mechanism.

In size, foreign trade developed before foreign direct investment in general, foreign direct investment does not match with foreign trade on the total size. Foreign direct investment began to appear and rapid development along with the development of the international situation (Such as the increase of trade barriers, investment conditions mature, etc.). Foreign direct investment can produce investment-trade scale effect, lead to the growth of foreign trade, the synergetic degree enhances unceasingly.

In structure, foreign trade commodity structure optimize constantly, proportion of primary products shrink, while the high-grade trend of foreign direct investment is obvious, return on capital increase day by day. The change direction is consistent, the adjustment of the structure of foreign trade and investment upgrade gradually.

In subject, foreign trade and investment become the enterprise internal choices gradually. Enterprise chooses foreign trade and investment according to the international situation, industry situation and national policy, the level of integration improved constantly.

In policy, countries mainly regulate the behavior of enterprise's foreign trade and investment through various policies, promote foreign trade and investment overall benefit maximization.

In location selection, companies usually have two choices, one is that company enter the international market by way of foreign trade first, then choose the way of foreign direct investment when the trade barriers increase or enterprise industry lost competitiveness in the market. Another way is that companies expand the international market through foreign direct investment to generate more revenue. And it will drive the export of raw materials, machinery and equipment and intermediate products, promoting the coordinated development of foreign trade and investment.

Foreign trade and investment interact with each other on the macroscopic and microscopic aspects, national policy guidance and enterprises' behavior promote the development of trade and investment integration.

In macro level, country guides the enterprises' behavior of foreign trade and investment through various policies, such as encouraging enterprises to implement the ministry of foreign trade and investment through fiscal policy, providing convenience for enterprise financing

through monetary policy, promoting foreign trade and investment synergy through trade policy and investment policy. Foreign direct investment gets growth caused by foreign trade. Foreign direct investment will produce export substitution effect and export induced effect, it will affect the foreign trade.

In micro level, trade and investment are the enterprise' internal choice, the enterprises dominate the foreign trade and investment. Enterprises achieve the synergy of foreign trade and investment according to their own advantages. Foreign trade is the starting point of enterprises transnational operation, foreign direct investment began to increase with the development of the international situation and domestic economic development demand for natural resources. The enterprises will choose foreign trade when its income is greater than the investment returns. The enterprises will choose foreign direct investment when its income is greater than foreign trade returns. Enterprises will choose collaborative development of foreign trade and investment when foreign trade and investment synergy can get greater benefits.

DYNAMIC EVOLUTION OF TRADE AND INVESTMENT INTEGRATION SYSTEM

The general process of system evolution: Trade and investment integration system is a complex system, includes the formation and evolution of it system, contact with outside world with material, energy and information exchange through the "group of yuan, part or subsystem" formed by the overall structure and function. Correlation function of foreign trade and investment enables the system to produce a whole effects, a new organization structure with new properties is different from the original system. We explore the formation of trade and investment integration path through the perspective of synergy.

The formation of the integration of trade and investment system experienced a process from scratch, gradually formed and evolved along with the development of foreign trade and investment. Foreign trade and investment in the process of cooperation and competition, through the guidance of national policy and corporate behavior, reduce the trade friction; make foreign trade and investment on the macro and micro level condensed into a harmonious system. The formation process of trade and investment integration based on synergy perspective experiences three periods: the initial stage is given priority to foreign trade; medium stage is investment development rapidly, in the late stage of foreign trade and investment integration symbiotic period.

Foreign trade as the main stage: In the early stages of development of foreign trade and investment, foreign trade is before the investment. The state and the enterprise can flexible choose the mode of foreign trade and investment according to the situation at home and abroad, the links between foreign trade and investment don't close and degree of association is small.

Rapid development stage of the foreign direct investment: Foreign trade and investment competition phenomenon appears with the rapid development of foreign direct investment, there are substitution, complement each other and fusion development relations, correlation are enhanced. The alternative and complementary of foreign trade and investment performances for competitive and cooperative relations.

Fusion symbiosis stage: In late stage, with the development of foreign trade and investment cooperation and competition, with promote foreign trade and investment policy guidance and support, the gap between foreign trade and foreign direct investment become smaller, the role of competition and cooperation promote the coordinated development of both fusion symbiosis and achieve overall benefit maximization.

Dynamics analysis of system evolution: Trade and investment integration system is in a state of imbalance in the first stage, the two sub-systems with conflict and the fusion presents the characteristics of nonlinear, then experiences many fluctuations and dominates the integration to achieve an orderly state. Nature of this dynamic change is the process of material, energy and information exchange within the system between internal and external process. The foreign trade and investment influence each other, the competition and cooperation promote the coordinated development of foreign trade and investment. The whole process of evolution has experienced three periods: Alternative, complementary and collaborative period.

Trade and investment integration system is a complex economic system; the research for complex problem is the unique advantages of system dynamics. Based on the behavior of trade and investment integration system and internal relations, this article constructs the foreign trade and investment co-evolution model of competition and cooperation to study the dynamic evolution law of integration of trade and investment.

The overall revenue maximization is the goal of the national foreign trade and investment, the coordinated development of foreign trade and investment promotes the co-evolution of foreign trade and investment. There are competitive co-evolution and

cooperative co-evolution relationship between foreign trade and investment, they improve trade and investment efficiency through competitive co-evolution and realize the optimal allocation of resources through a cooperative co-evolution.

Collaborative competition and cooperation decide the evolution of the integration of trade and investment system. The competition between foreign trade and investment has positive effects and negative effects. For the sake of simplicity, model assumes that the competition only has inhibition on the premise of not impact analysis.

The competition and cooperation co-evolution between foreign trade and investment model is as follows:

$$\frac{dR_1}{dt} = F_1(R_1, R_2) = \frac{s_1 R_1 (K_1 - N_1 - a_{12} R_2 + b_{12} R_2)}{K_1} \quad (1)$$

$$\frac{dR_2}{dt} = F_2(R_1, R_2) = \frac{s_2 R_2 (K_2 - N_2 - a_{21} R_1 + b_{21} R_1)}{K_2} \quad (2)$$

$R_1 \geq 0$ and $R_2 \geq 0$, they represent the income of the foreign trade and investment, respectively.

S_1 and S_2 represent the growth rate of foreign trade and investment respectively, $K_1 > 0$ and $K_2 > 0$, they represent the biggest gains independently of foreign trade and investment respectively in case of all kinds of resources determined.

a_{ij} is a competition coefficient ($a_{ij} \geq 0$), it means that the competition between foreign trade and investment has inhibition effect.

B_{ij} is a cooperation coefficient, it means that the cooperation between foreign trade and investment has mutually beneficial effect, $i, j = 1, 2$.

The income of foreign trade and investment is a function of time, it's a dynamic evolution changes over time.

The competition of foreign trade and investment co-evolution model: There is an only competition relationship between foreign trade and investment when $a_{12} > 0$, $a_{21} > 0$, $b_{12} = b_{21} = 0$ (no cooperation), so:

$$\frac{dR_1}{dt} = F_1(R_1, R_2) = \frac{s_1 R_1 (K_1 - N_1 - a_{12} R_2)}{K_1} \quad (3)$$

$$\frac{dR_2}{dt} = F_2(R_1, R_2) = \frac{s_2 R_2 (K_2 - N_2 - a_{21} R_1)}{K_2} \quad (4)$$

$$F_2(R_1, R_2) = 0$$

The steady state solutions is $A_1(0, 0)$, $A_2(0, K_2)$, $A_3(K_1, 0)$, $A_4[(K_1 - a_{12} K_2)/(1 - a_{12} a_{21}), (K_2 - a_{21} K_1)/(1 - a_{12} a_{21})]$.

According to the theory of differential equation of the geometric (Lius M.B. Cabral, 2002), make the system

isoclinic line is zero, respectively and finds the intersection situation. Analysis on the oblique line system can analyze the steady state solution of foreign trade and investment system:

$$\frac{s_1 R_1 (K_1 - R_1 - a_{12} R_2)}{K_1} = 0 \quad (5)$$

$$\frac{s_2 R_2 (K_2 - R_2 - a_{21} R_1)}{K_2} = 0 \quad (6)$$

There are 4 kinds of symbols of:

$$\frac{dR_1}{dt}, \frac{dR_2}{dt}$$

and Isoclinic line.

- $A_3(K_1, 0)$ is the steady state solution of trade and investment integration system when $a_{12} < K_1/K_2$ and $a_{21} > K_2/K_1$ showed in (a) and (b) of Fig. 1. There is competition of foreign trade and investment and foreign trade has advantage over investment. $A_2(0, K_2)$ is the steady state solution of integration of trade and investment system when $a_{12} > K_1/K_2$ and $a_{21} < K_2/K_1$ showed in (I) and (II) of Fig. 1. There is competition of foreign trade and investment and investment has advantage over foreign trade
- $A_2(0, K_2)$ and $A_3(K_1, 0)$ is the steady solution of the trade and investment integration system when $a_{12} > K_1/K_2$ and $a_{21} > K_2/K_1$ showed in (III) of Fig. 1. Foreign trade or investment has advantage depends on the initially income ratio of foreign trade and investment

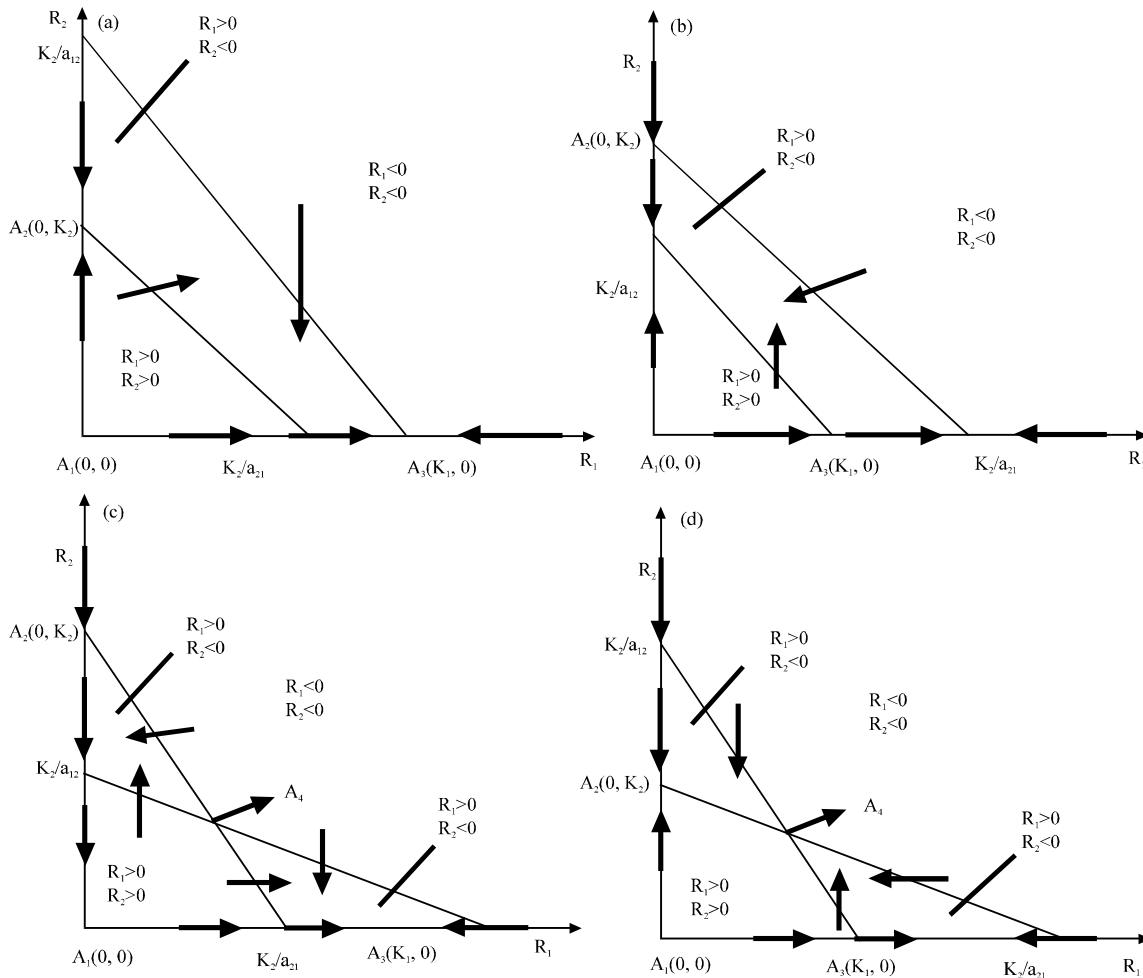


Fig. 1(a-d): Competitive co-evolution of foreign trade and investment

- $A_4 [(K_1 - a_{12}K_2)/(1 - a_{12}a_{21}), (K_2 - a_{21}K_1)/(1 - a_{12}a_{21})]$ is the steady solution of trade and investment integration system when $a_{12}a_{21} < 1$ and $a_{12} < K_1/K_2 < 1/a_{21}$ showed in the (IV) of Fig. 1. It shows that the result of competition between foreign trade and investment in the system is both stable

Foreign trade and investment cooperation co-evolution

model: Foreign trade and investment is reciprocal symbiosis when $a_{12} = a_{21} = 0$ (no competition), $b_{12} \neq 0, b_{21} \neq 0$, the Eq. 1, 2 becomes:

$$\frac{dR_1}{dt} = F_1(R_1, R_2) = \frac{s_1 R_1 (K_1 - R_1 + b_{12} R_2)}{K_1} \quad (7)$$

$$\frac{dR_2}{dt} = F_2(R_1, R_2) = \frac{s_2 R_2 (K_2 - R_2 + b_{21} R_1)}{K_2} \quad (8)$$

The system Isoclinic line is as follows:

$$\frac{s_1 R_1 (K_1 - R_1 + b_{12} R_2)}{K_1} = 0 \quad (9)$$

$$\frac{s_2 R_2 (K_2 - R_2 + b_{21} R_1)}{K_2} = 0 \quad (10)$$

Taking up the analysis methods as above of the system, knowing the system Isoclinic line intersect, at the same time getting the system trajectory towards as shown in Fig. 2.

The integration of trade and investment system has four steady state solutions when $b_{12} * b_{21} < 1$, $A_1(0, 0), A_2(0, K_2), A_3(K_1, 0), A_4[(K_1 + b_{12}K_2)/(1 - b_{12}b_{21}), (K_2 + b_{21}K_1)/(1 - b_{12}b_{21})]$. The A_4 is a stable solution of trade and investment integration system. Foreign trade or investment is the choice of two different in the foreign trade and investment when a country or enterprise participates in the international business. Foreign trade and investment have cooperation in the regional flow, resource utilization, production technology, choice of industry and resource sharing of aspects as information. The cooperation and sharing expand the income of the foreign trade and investment makes it produce synergy effect.

The competition and cooperation co-evolution model of foreign trade and investment: The relation between foreign trade and investment is competitive and cooperation co-evolution when $a_{12} \neq 0, a_{21} \neq 0, b_{12} \neq 0$ and $b_{21} \neq 0$.

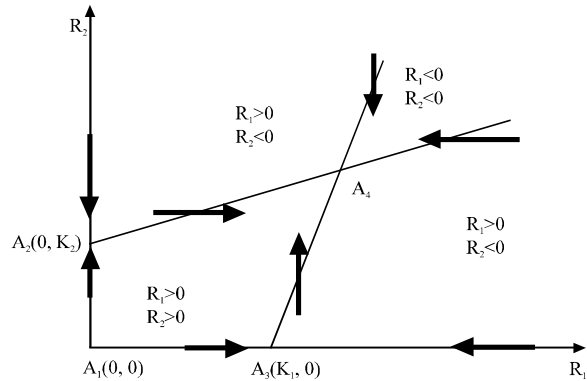


Fig. 2: Foreign trade and investment cooperation co-evolution

$$F_1(R_1, R_2) = 0$$

$$F_2(R_1, R_2) = 0$$

The steady state solution of Eq. 1, 2 simultaneous equations is as follows:

$$A_1(0, 0), A_2(0, K_2), A_3(K_1, 0), A_4\left(\frac{K_1 - K_2(a_{12} - b_{12})}{[1 - (a_{12} - b_{12})(a_{21} - b_{21})]}, \frac{[K_2 - K_1(a_{21} - b_{21})]}{[1 - (a_{12} - b_{12})(a_{21} - b_{21})]}\right)$$

If $a_{12} - b_{12} > 0, a_{21} - b_{21} > 0$, that is to say $a_{12} > b_{12}, a_{21} > b_{21}$:

- The competitive inhibition effect of the foreign trade and investment is greater than the effect of cooperation of mutual benefit in this case, point stable equilibrium between foreign trade and investment showed in Fig. 2

A_4 is the stable solution of trade and investment integration system, If $(a_{12} - b_{12})(a_{21} - b_{21}) < 1$ and $a_{12} - b_{12}$:

$$\frac{K_1}{K_2} < \frac{1}{a_{21} - b_{21}}$$

at the same time, so $R_1^* < K_1, R_2^* < K_2$. It shows that the excessive competition of foreign trade and investment will cause a loss when a country participates in the international business and makes the overall interests cannot reach the ideal size. Trade and investment should avoid vicious competition but a coordinated development in the synergy of trade and investment

- The synergy effect of foreign trade and investment cooperation is more than its competitive inhibition effect, if $a_{12} - b_{12} < 0, a_{21} - b_{21} < 0$, that is to say $a_{12} < b_{12}, a_{21} < b_{21}$ at the same time, point stable equilibrium between foreign trade and investment showed in Fig. 2

A_4 is the stable solution of trade and investment integration system, If $(a_{12} - b_{12})(a_{21} - b_{21}) < 1$, at this point, $R^*_1 > K_1$, $R^*_2 > K_2$. It means that competition and cooperation are the dynamic evolution of trade and investment integration system. It can stimulate innovation motivation of foreign trade and investment through the competition between foreign trade and investment. The cooperation between foreign trade and investment expands the development space of foreign trade and investment

- The cooperation effect of investment over foreign trade is more than competitive inhibition effect, the cooperation effect of foreign trade over investment is less than its competitive inhibition effect, if $a_{12}-b_{12}<0$, $a_{21}-b_{21}>0$, that is to say $a_{12}<b_{12}$, $a_{21}>b_{21}$ at the same time. The isoclinic line intersection situation of trade and investment integration system is shown in Fig. 2

It's unable to decide whether A_4 is a stable solution in the rail line of isoclinic line system showed in Fig. 3 (a). According to the stability of the system of differential equations theory

There are two negative real root of the characteristic equation when $a_{21}-b_{21}<K_2/K_1$ and A_4 is the stable point, so $R^*_1 > K_1$, $R^*_2 < K_2$. Foreign trade and investment will reach stable equilibrium when the effective effect of foreign trade and investment (i.e., the add effect of competitive inhibition effect and cooperation effect) is lower than the largest ratio of the foreign trade and investment, namely the competition constraints in a controllable scope

$A_3(K_1, 0)$ is the stable solution of the trade and investment integration system when $a_{21}-b_{21}>K_2/K_1$ as showed in Fig. 3 (b). This shows that investment returns reduce and foreign trade income increase gradually due to the excessive competition between foreign trade and investment

- In the same way, in the foreign trade and investment system

A_4 is the stable solution of trade and investment integration system when $a_{12}-b_{12}<K_1/K_2$, if $a_{12} - b_{12}>0$, $a_{21}-b_{21}<0$, that is to say $a_{12}>b_{12}$, $a_{21}<b_{21}$, so $R^*_1 < K_1$, $R^*_2 > K_2$. $A_2(0, K_2)$ is stable solution of trade and investment integration system when $a_{12}-b_{12}>K_1/K_2$

The operational mechanism of trade and investment integration system: This article analyses the dynamic mechanism the integration mechanism and feedback mechanism of trade and investment integration, explores the influence of different mechanisms for trade and investment integration to reveal the movement mechanism of trade and investment synergy.

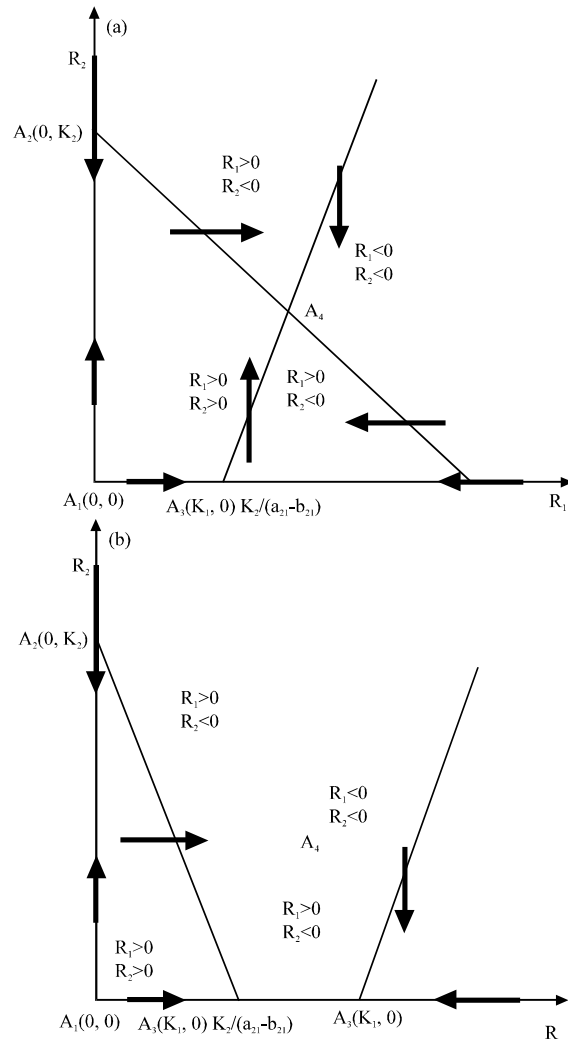


Fig. 3(a-b): Competition of foreign trade and investment cooperation co-evolution

Dynamic mechanism: The cooperation and competition of the system of trade and investment integration is the intrinsic power source to make system from disorder to order and form the dynamic mechanism of promoting the system evolution. Evolution is the result of the competition and synergy between subsystems and plays an important role in the stability of the orderliness and integration of trade and investment system. Competition makes the whole system tends to non-equilibrium state, synergistic effect makes subsystem joint some of the movement and amplifier it in non equilibrium conditions to form the order parameter, to control the development of the system as a whole competition.

"Competition" in the trade and investment integration system is the mutual influence between subsystems in

different elements; it's a dynamic process of confrontation and competing for resources.

The substitute relationship between foreign trade and investment is a form of competition, subsystem of foreign trade and investment has independence and diversity, foreign trade and investment have competitive behavior on the macro and micro level. Limited amount of resources used in foreign trade and investment, there is competition in location, subject and structure, the competition has two effects, one is to give pressure to the countries and companies, stimulate their initiative and creativity, coordinate the relationship between them, integrate and utilize the various elements of the system to perfect relevant policies and measures in foreign trade and investment.

The second is competition can make foreign trade and investment produce difference and imbalance between two sub-systems, bring negative effects, to reduce the overall benefits of trade and investment. To eliminate the negative effects brought by the competition through external intervention and guide benign competition of the implementation of foreign trade and investment, to keep trade and investment integration system energetic.

Synergy: Subsystem of foreign trade and investment are similarity, identity, enable them to coordinate development. Synergy is important power to promote the trade and investment integration system evolve smoothly, the complementary relationship between foreign trade and investment is a reflection of collaborative forms. Haken's view is that synergy is joint or collective behavior of system coordination and cooperation embodies the integrity and relevance of the system. Competition leads trade and investment integration system to imbalances, while synergy dominates the evolution of the whole system through joint and amplification of subsystem, respectively. In the process of evolution of the whole system, two sub-systems of foreign trade and investment revised the synergy degree through the feedback mechanism of the overall benefits.

From the integration of trade and investment within the system, foreign trade and investment integration in the country and enterprise, reflects the relationship between the two mutually reinforcing and embodies in the mutually reinforcing relationship, foreign trade has been driving the expansion of the foreign direct investment, increasing of investment in turn promotes the growth of foreign trade. This guides the integration of trade and investment system orderly transition to a new state.

Integrated mechanism: Integrated mechanism refers to that synergy between foreign trade and investment subsystems is a kind of integration behavior, the common interests is their goal, each behavior subject closely together strengthen the cooperation between the two subsystems, they have the characteristics of integrity, initiative and fusion. The implementation of the subsystem synergy of foreign trade and investment which is based on sharing different elements of resources, effectively integrates the essential elements and utilization of resources, realizes the resource optimal allocation. Building the appropriate coordination model by integrating mechanism, promoting each other between the parts in the system engagement and interdependent and forming a pattern of benefit-sharing, risk-sharing to ensure the implementation of synergy and the realization of synergy benefits.

Integration mechanism is a mechanism to manage internal and external factors comprehensively associated with the foreign trade and investment sub-systems. It is the dynamic, continuous, uniform and the overall integration of various elements and realizes the synergy of them. Integrated mechanism embodied in countries integrate the industry and the relevant factors of the enterprise through foreign trade and investment policy, Enterprises choose trade and investment according to their own industry development status and the elements of national policy to maximize overall benefit. Integration mainly includes policy elements integration, resource integration, structure integration, enterprise behavior integration, etc. System can respond rapidly and accurately according to the external environment change to promote the development of integration of trade and investment.

Feedback mechanism: Feedback mechanism goes through the process of strategic execution of the trade and investment integration system.

Comparing the practical situation of foreign trade and investment subsystems with the evaluation standard of trade and investment (the system synergy degree), measuring the synergy situation of the foreign trade and investment, coordinating the development of foreign trade and investment in macroscopic and microscopic aspects through the measures adjustment, this can better promote the development of integration of trade and investment.

The feedback mechanism of trade and investment integration system includes positive and negative feedback mechanisms. Positive feedback mechanism can make the system more deviate from the equilibrium position, it can't maintain the steady state system, the

significance of positive feedback mechanism lies in the guidance system of foreign trade growth, increasing of foreign trade and direct investment, changing of national policy, optimizing and upgrading of the industrial, expanding of the enterprise scale and the global financial crisis are positive feedback. Negative feedback mechanism is the guarantee system to maintain the power of the steady state, it refers to the output of the system turn into the input of a decision system function in the future. The meaning of the negative feedback mechanism lies in maintaining steady state of the system through its own function to slow the pressure inside the system.

All three of these mechanisms promote the synergy of foreign trade and investment; contribute the development of trade and investment integration.

CONCLUSION

The relation of foreign trade and investment is not entirely replace or complement, it is a kind of contain each other, encourage each other, integrated an organic whole and synergy development. Trade and investment integration is not a form as a result but a forming process. In this process, competition and cooperation of foreign trade and investment subsystem play an important role.

By competitive co-evolution, foreign trade and investment's efficiency is improved. By cooperative co-evolution, the system can realize the optimal allocation of resources and achieve the maximization interests, increase national interests, promote enterprise development. The synergy result of foreign trade and investment will get their own maximum benefits and get the overall interests.

Operation mechanism is conducive to foreign trade and investment subsystems coordinated organization, adaptability, cohesion and attraction of ascension, guarantee system internal and external development benign interaction. The cooperation and competition between foreign trade and investment subsystem is the intrinsic power source makes the system from disorder to order and form the dynamic mechanism of evolution.

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