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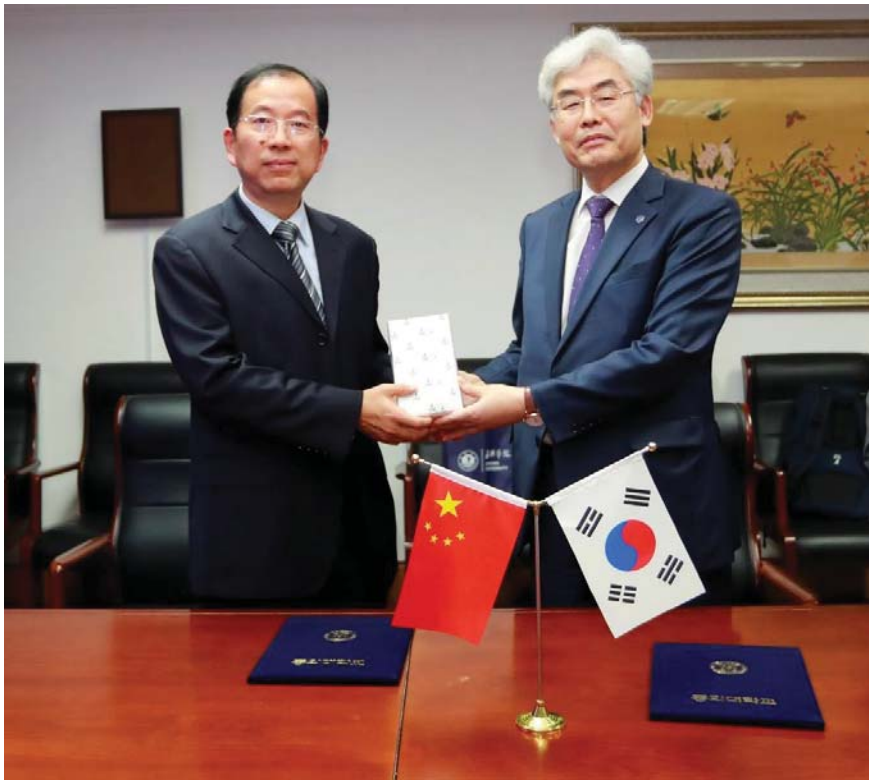
# Preface

Most of the articles included in this issue are selected from papers presented at the *13th East Asian Economic and Cultural Forum*. The authors are from various universities in China, South Korea, Denmark, and the UK. The Forum was originally co-founded and rotationally hosted by Jiaxing University and the South Korean Catholic Kwandong University. The Forum has held 13 successful sessions so far. The focus of the Forum is the "East Asian Development Model", and it looks at the political, economic, social, and cultural issues involved in the regional integration process.


The above picture includes some of the key university leaders and participants of the 13th East Asian Economic and Cultural Forum held at Jiaxing University in October 2017. The speakers came from a number of universities, including Jiaxing University in China, Chubu University in Japan, Dong-Eui University in South Korea, Aalborg University in Denmark, and the University of London in the UK.



The next forum will be hosted by Dong-Eui University in South Korea in November 2018. The above picture shows the signing of the bilateral cooperation agreement between President Sheng Songen of Jiaxing University and President Sun-jin Kong of Dong-Eui University. The bilateral cooperation includes the rotational hosting of the Forum between the two universities.

In light of the discussions included in this issue by the scholars who have attended the Forum and who analyze a variety of issues concerning the impact of the rise of China on global governance, regional integration, and China's international relations, the current issue also includes an article by Nidi Bueno, Natalia B. R. Coelho, and Renata Corrêa Ribeiro who analyze the perceptions of China held by the Brazilian elite, given China's commercial significance to Brazil.

*Li Xing*
Editor in Chief

# Integration and Regional Industrial Development: Theoretical Frameworks and Literature Reviews

*Jiayi Han*[1]

**Abstract:** Integration, a phenomenon in the process of economic growth, has been acting as essential to productivity growth and regional industrial development. It enhances regional economy through certain economic relationships between economic entities and between regions, including exchange and agglomeration. Hence, economists have long been attracted to the continued exploration of internal mechanisms and functions of integration that would lead to improved productivity and industrial performance. Aiming to provide a theoretical reference with a practical value in planning the prospects of industrial resource integration, so as to balance the industrial distribution of regions and promote their economic development, this paper starts a theoretical review of integration from defining key concepts, and then follows with the factors that influence integration, a theoretical study on integration and regional industrial development, along with the unveiling of the dynamic mechanisms of integration and regional industrial development.

**Keywords:** Regional integration, regional industrial development, theoretical frameworks, reviews.

## Introduction

Since the late 1970s, interest in specialisation and integration has resurfaced in academic economics discourse. Up to this day, crucial to this revival is the fact that more and more contemporary economists, when dealing with the fundamental mechanisms of various forms of economic development, such as industrialisation, urbanisation, institutional transition, economic growth and the structural change of the firm, have become aware of increasing returns of the division of labour to account for observed phenomena (Kim, 2006).

On the face of it, as a phenomenon in the process of economic growth, integration has been acting as essential for productivity growth and regional industrial development. This paper intends to clarify the assumption that regional integration is the fundamental pursuit of economic entities and multi-governments from different regions in the context of globalisation. The key to verifying

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the reciprocal interaction between integration and regional industrial development is to formulate a systematic theoretical basis, which will be derived from analysing relevant theories and then accordingly mapping a dynamic mechanism to allow integration to make a direct impact on regional industrial development in a positive way.

## Definitions and Influence Factors of Integration

Industrial developmental structures which feature a diverse range of influence factors will directly shape integration in certain economic spaces. In this light, here, this paper will not only present the concepts of integration but also examine the regularity in the flow of factors of production within regions, the regularity in evolution and development of regional industries, as well as the regularity in integration and cooperation of economic entities.

### *Definitions of Integration*

As Walker and Sayer (1992) claimed, integration theory begins with neoclassical presumptions: the fundamental problem of economic life is the allocation and organisation of scarce resources, the exchange is the basis of action, businesses are rational actors seeking efficient solutions, and the essence of production is cost minimisation. At present, in the context of globalised industrialisation, the present-day organisational problem in the industrial economy begins with production rather than exchange. At the heart of integration, which includes regional integration and industrial integration, bringing together labour, materials and machinery poses an elemental organisational problem (Walker and Sayer, 1992; Choe, 2001).

The concept of regional integration is an important criterion to assess regional development. Regional integration first appeared in 1995 in the first project by European Spatial Development Perspective (ESDP), then under the term spatial articulation. Initially centring on specific aspects of cross-border relationships, the concept gradually extended to a more comprehensive vision as summarised in the first official project of the ESDP: “Regional integration expressed the opportunities for and level of (economic, cultural) interaction within and between areas and may reflect the willingness to co-operate. Regional integration is positively influenced by the presence of efficient administrative bodies, physical and functional complementarity between areas and the absence of cultural and political controversies.” (De Boe, Grasland, & Healy, 1999:8) To sum up,

the creation of trade regions and the emergence of ties between the core and surrounding areas eliminate settlement frontiers, thus leading to regional integration.

Next, industrial integration shall be clearly delineated in terms of its connotation and main participants. Industrial integration exists as the outcome of the division of labour and also its driver. During industrialisation, factors of production are reallocated across industries and across ownerships, according to patterns of industrial development. Serving as base units, firms and enterprises build up and adjust new organisation of capital, leading to advantageous leading industries and relevant industrial structures. In pursuit of long-term competitive advantages, the major entities of industrial integration consist of large enterprises and groups (Lu, 2017).

Both regional aggregation and industrial aggregation constitute the objective economic foundations for the development of regional economy and the formation of cities. Industrial aggregation leads to the formation of specialised industrial zones. Regional aggregation of industries, on the other hand, requires economies of scale and economies of scope, both of which would lead to the emergence of new cities or further expansion from existing cities. In practice, there are usually three dimensions to integration, namely regional, industrial and institutional (Baumol and Alan, 2009). Among them, the regional dimension is the foundation that most embodies and represents the operations of industries. Industrial dimension is the core content created within spaces. The institutional dimension is the assurance for economic and regional integration.

***Influence Factors of Integration***

This section will illustrate an array of influencing factors, including regional endowments, industrial level and institutional status, that determine the choices of profit-driven regional economic entities. The motivation for regional economic profits would drive economic entities to opt for local industrial planning and seek out regional cooperation for the purpose of industrial development. So, the attainment of maximum regional economic efficiency becomes the driving force for the integration (Lo. 2004). Following overall regional industrial developmental plans, regional advantages are fully utilised and complemented with integration.

Regional industrial division of labour and integration can be viewed as the process for the economic agents to facilitate the flow of production factors and decisions of resource allocation,

and simultaneously such decisions and changes would shape these economic agents. (Guan, 2007). The decision is not just about the excavation and utilisation of endowed resources for each area within the region. It also involves an optimisation for the better allocation of such resources and factors of production within geographic spaces. In order to achieve maximum industrial development, economic agents would consider various factors and their influences in the decision-making process so that overall interaction across factors would bring about expected social economic benefits. Various factors of influence are crucial for our understanding of the formation and realisation of the regional industrial division of labour and integration.

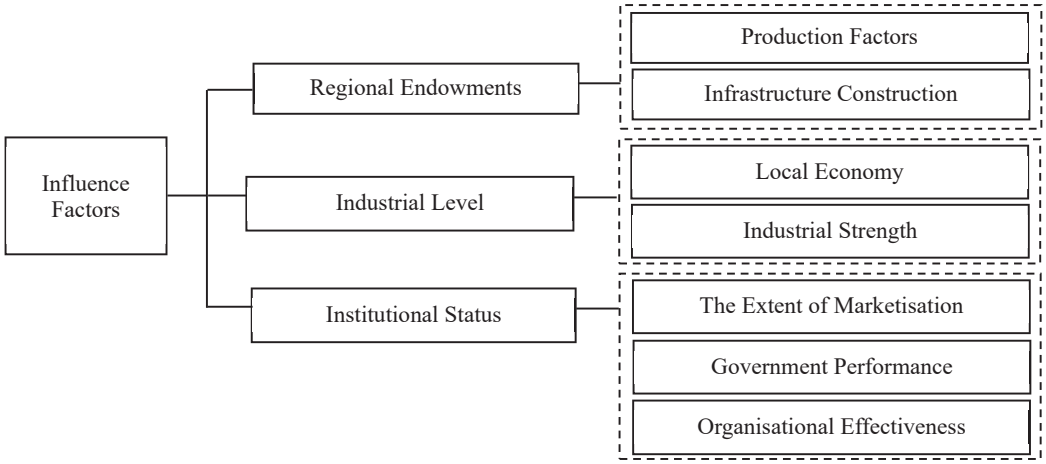


**Figure 1: Influence Factors**
Sources: Author's Own Figure

As is shown in Figure 1, these factors would include regional endowments that are closely linked with the specific geographic traits of the region, the industrial level that is linked to the degree of regional industrial development and the institutional status that is linked to the institutional structures of the region. Each factor entails different content and meaning, leading to varying degrees of impact on the regional industrial division of labour and integration.

Since different regions are situated in different geographic locations, they are endowed with varying geographic conditions. Based on factor endowment theory, for each country or region endowed with different factors of production, each region would spend the factor for which it is more endowed to produce certain goods, and thus lead to a comparative advantage in that good (Heckscher and Ohlin, 1933). In the context of industrialisation, for each geographic space range, there would exist differences in geographic conditions, labour resources, and capital stock, level

of science and technology as well as infrastructure construction. These factors fundamentally alter the industrial division of labour and integration for the regions.

Since different regions are situated in different geographic locations, they are endowed with varying geographic conditions. Based on the factor endowment theory, for each country or region that is endowed with different factors of production, each region would produce goods requiring inputs that are relatively abundant in the region, thus leading to a comparative advantage in that good (Heckscher, 1919; Ohlin, 1933). In the context of industrialisation, for each geographic space range, there would exist differences in geographic conditions, labour resources, and capital stock, level of science and technology, as well as infrastructure construction. These factors fundamentally alter industrial integration for the regions.

Regional endowments constitute dynamic comparative advantages over regions. There is a relatively higher degree of flow in production factors, as social economic activities continue to change in quantity and spatial allocation. In this process, with different input and scale of endowments, this would directly determine the economic outcome, and at the same time differences in demand for factor input and attractiveness for production factors would arise, each having significant influence over the formation and construction of regional industrial integration.

The impact of institutional status on integration is reflected in the functions of various organisations, ranging from the determination of property rights for economic entities, transference of information, planning of the developmental model for regional economies, and the formulation of laws and policies for the balancing of interests between parties. Especially for regional industrial integration, regional production factors and industries would be distributed spatially, based on the principles of market mechanisms with the participation and coordination of government and non-government bodies (Baumol and Alan, 2009). Accordingly, economic growth within regions can be achieved given the comprehensive impact of market, government and organisations.

**Literature Reviews on Integration and Regional Industrial Development**

There are various strands of literature discussions over time about the process of regional industrial development. To take the following examples: Marshallian economies of scale, Thünen's theory of the isolated state, Weber's industrial location theory, Christaller's central place theory, Losch's location theory, and Perroux's growth pole theory. These theories address, among other things, the

optimisation of location along industrial chains to varying degrees and effectiveness. For Friedman (1966), the core-periphery theory relates to the industrial communications between regions, resource allocation, factor flow, and the regional industrial division of labour. Since the age of modern globalisation, world economic activities are spatially mapped in novel landscapes. With that in mind, new economic geography and other derivative studies utilise specialisation, social networks, increasing returns, path dependency, and institutional factors as theoretical backbones to enrich the prolific academic field that revolves around the integration of industrial chains and industrial spatial formation and distribution.

***Expansion of Production and Economics of Scale***

Economies of scale is a practical concept that may explain real-world phenomena such as patterns of international trade or the number of firms in a market. The exploitation of economies of scale helps explain why companies grow large in some industries. From a microeconomic point of view, economies of scale are the cost advantages that enterprises obtain due to size, output, or scale of operation. Generally, cost per unit of output decreases with increasing scale since fixed costs are spread out over more units of output. It can be applied to a variety of organisational and business situations and at various levels, such as a business or manufacturing unit, plant or an entire enterprise (Marius and Johan, 1998; Brülhart, 1998).

The concept of economies of scale and the idea of obtaining larger production returns through the use of the division of labour date back to Smith, while diseconomies of scale are the opposite. This inspired Marshall (1923) who studied industrial organisation from neoclassical economics view, indirectly showing that firms are inclined to converge in pursuit of economies of scale. To account for the phenomenon he observed, Marshal proposes the concept of the industrial district a geographical region which has emerged from the concentration of industries under the influences of both historical and natural forces, featured by refinement in the division of labour for productive activities within a region. The division of labour can rapidly improve productivity for producing organisations within the region, creating a solid material basis for the continued interaction between given region and external spaces including suppliers and clients from this region or other regions. Hence, industrial district frequently features the following characteristics: value system upheld and commonly recognised within the region, connected productive

organisation groups, the full division of labour and cooperation, optimal allocation of human resources, and steadily functioning credit system (Baldwin and Venables, 1995).

The economies of scale that occur in the industrial district can be divided into two types. The first is external economies of scale, which means an increase in the number of enterprises within an industry leads to the expansion of the scale of the industry. In this process, there are other similar industries continuously converging in specific regions, creating or attracting related organisations, leading to the development of industrial districts. Hence, an external economy of scale not only affects the development in production for enterprises within an industry but also promotes clustering aggregation and the emergence of integration that encompass greater scope (Greenaway and Hine, 1991). The second is internal economies of scale, which means firm-specific organisations expand their productive capacity in the process of profit maximisation. Because of expansion in productive capacity and output, the fixed costs, including managerial costs, information costs, costs for designing, and those for research and development, are evenly and decreasingly spread out onto each unit (Zhou, 1999). Firms possessing sizeable internal economies of scale are usually conglomerates or large enterprises, and mostly focus on manufacturing and information industries featuring high design, managerial, and sales costs (Zhou, 1999). In contrast, external economies of scale allow all firms within the industry to benefit, while internal economies of scale are geared towards improving firm-specific productivity for individual enterprises which strive for greater profits (Zhou, 1999).

To sum up, Krugman (1991) views the sharing of a labour market, the supply of productive forces, and technological spillover as the three key factors of the Marshallian theory of economies of scale. However, Marshallian economies of scale theory, constrained by temporal industrial developmental level, fails to consider dynamic factors like the growth of enterprises within region and enterprises moving in- and out-of-region. It also neglects external links between regional industrial organisations (Chen and Zhang, 2003).

***Industrial Agglomeration and Location Theory***

Differentiated from economies of scale, location theory is concerned with the geographic location of economic activity; it has become an integral part of economic geography, regional science, and spatial economics. Location theory addresses questions of which economic activities are located

where and why. Location theory rests on the assumption that entities act in their own self-interest. Firms thus choose locations that maximise their profits and individuals choose locations that maximise their utility (Chinitz, 1961).

Continuing on J. H. Von Thünen's (1826) research on land use, Alfred Weber (1929) examined the advantages of aggregation and cost comparison, which is then used to determine if enterprises choose to locate close to one another under the premise of modern transportation modes in the industrial age. Based on this, Weber (1929) investigated some reasons for the spatial aggregation of industries in certain regions, formulating an industrial location theory. Industrial integration can be separated into two stages; the first being a simple expansion from within an enterprise, and the second being development led by big enterprises. Weber believed that there are four core reasons for industrial clustering. The first factor is the development of technical equipment. With the overall improvement in functionality and the specialisation of technical equipment, co-dependency in technical equipment would drive regional concentrations. The second factor is the emergence of productive organisations. A fully developed and comprehensive productive organisation is seen as 'equipment' in a certain sense. Its degree of specialisation leads to the clustering of industrial regions. The third factor is market forces. Industrial clustering can maximise the level of bulk purchases and sales and allow the acquisition of credit at a lower cost of financing. The fourth factor is a frequent reduction in expenditure costs. Industrial clustering would lead to the construction of relevant infrastructure, leading to a reduction in recurrent expenditure costs (Weber, 1929).

Subsequently, works by Walter Christaller (1933) and August Losch (1940) were likewise fundamental to location theory. They tried to explain the spatial organisation of economy from a different view than Weber's cost approach. Christaller (1933) initially raised a theory of central locality that aims to understand how products and services which characterise urban functions are organised over a territory and then create an urban hierarchy. In this theory, central places are cities that provide a surrounding area with goods and services that could be of low- or high-order. The hierarchy of goods and services depends on the goods threshold and distance ranges. Firstly, the threshold that guarantees a minimum quantity of goods products in an efficient way; secondly, the range that decides the maximum distance that people will travel to buy services and goods. And, the price of the product must include the cost of the travel. In these concepts, the assumption that

a good is produced only if this flow exceeds the threshold's minimum territorial distance and is located along a hierarchy of goods identified by the size of the respective thresholds is derived. Hence, Christaller proposed the formation of the hexagonal lattice as a spatial structure of production, where a higher-order good, i.e. the centre, is localised at the central area and located at the same distance from each edge of the hexagons[2], associated with the production of a lower-order good, i.e. sub-centres. Different from Christaller, Losch highlighted different factor of proportionality along the urban hierarchy. He responded to the three principles about organisation market, including market, transportation and administration, that Christaller was concerned with. Another important concept of *economic regions* was introduced by Losch, deriving from but equivalent to those political, cultural and geographical units. For Losch, a market area corresponds to an economic region. Assuming same transportation conditions, abundance in productive resources, even population distribution and the same level of residential consumption, Losch linked profits to sales scope of products connected to market location, analysing market area, market nets and systems of hexagonal trade areas. He pointed to different production costs among regions and used the profit to estimate the spatial allocation of enterprises. Later, Isard (1956) integrated the models of Thünen, Weber, Christaller, Losch and others into a unified model and established *General Equilibrium Theory*, which deals with an economy where all factors and producers, commodities and consumers are, in effect, congregated at one point.

In addition, Hoover (1936) explained locational patterns under different economic development stages from historical points of view. Hoover proposed the optimal scale of industrial agglomeration and separated industrial economies of scale into three layers. The first is the economy determined by individual locational units, such as factories and shops. The second is economy determined by the scale of the single company. The third is the economy determined by

[2] The shape of trading area is not a circle, as we have so far assumed. Even if the whole country were filled with such circular areas that are close enough to touch each other, a number of people could successfully try to enter the brewer business. So, we have a dark corner. The way to make use of the dark corners is to change the circular form into a regular hexagon. Also, two other possibilities of avoiding dark corners are conceivable, namely the square and the triangle. But it can be shown that the hexagon has an economic advantage over both: it affords the larger demand per square mile, provided the total area is the same in all cases. The hexagon is, therefore, the most economical shape for trading areas (Losch, 1938).

the scale of the aggregation of such industry. When these economies achieve their respective maximum scales, it would constitute the optimal scale for locational units, enterprises, and aggregated entities. The economic effects from such an aggregation are conducive for the development of trained labour forces and managerial individuals. In addition, a steady flow of information from a geographical concentration also stimulates operating productive entities to reform and innovate. In the pursuit of greater efficiency in profit, enterprises would compete and cooperate at the same time.

Therefore, industrial activities exhibit a general tendency for spatial aggregation. Under external constraints from environments, such as historical incidents, trade protectionism, and geographical segmentation, etc., the spatial pattern of industrial location is diversified. Once specific industrial spatial aggregations are established, they tend to be self-sustaining (Krugman, 1991). In this process, industrial clustering is divided into two stages. In the primary stage, aggregation advantages only arise from expansion in scale from the productive organisation itself. In the advanced stage, concentration is led by large enterprises, cohesively linking various productive organisations within the industry, leading to integration (Kim, 2001).

***Local Planning and Growth Pole Theory***

Growth pole theory is basically concerned with the phenomenon of economic development and with the process of structural change that accompanied this phenomenon. In growth pole theory, the explanation for modern economic growth deviates from the stationary conception of equilibrium growth.

Based on the Schumpeterian theory of innovations, large-scale firms and development[3], the growth pole theory was originally raised by Francois Perroux (1950, 1955) and was further developed by Jacques Raoul Boudeville (1966). Perroux (1955) argued that development does not appear everywhere all at once. Rather, development appears in points or development poles with

[3] In Schumpeter's analysis, development occurs as a result of discontinuous spurts in a dynamic world. Such discontinuous spurts are caused by the innovative entrepreneur whose activities generally take place in large-scale firms which are able to dominate their environment in the sense of exercising reversible and partially reversible influences on other economic units by reason of their dimension, negotiating strength, and by the nature of their operations (Schumpeter, 1934).

variable intensities and spreads along diverse channels and with varying terminal effects to the whole of the economy. In his idea, an economic space can be viewed as a field of forces consisting of centres, from which centrifugal forces emanate, and to which centripetal forces are attracted. Each centre, being a centre of attraction and repulsion, has its proper field which is set in the field of other centres. During the process of the pole-development in an economic space, the scale of operation, dominance, and impulse have close relationships to innovation. Also, the intensity of a propulsive firm's interrelation with other sectors of the economy is important enough for the induced effect to be transmitted to them (Perroux, 1950, 1955). Therefore, Perroux believes that the effect of agglomeration has a high ability to propel regional economic performance.

Boudeville (1966) further elaborated the developmental process of growth pole concept by giving it a more geographical orientation. It was with Boudeville that the growth pole theory received a specific geographical and regional importance. He defines a regional growth pole as a place where a set of expanding industries is located, and further development of economic activity occurs throughout its zone of influence. The external economies, therefore, become available in the area constituting the growth pole of a region. There are mainly three types of external economies that include economies that can be internal to the firms and industry, economies that can be external to the firm but internal to the industry, and economies that can be external to the industry but internal to the urban area[4] (Chand and Puri, 1983). Where these expanding, propulsive or leading firms and industry are regionally located, the place consequently becomes the regional pole, in turn promoting agglomeration tendencies.

In addition, Gunnar Myrdal (1957) and A.O. Hirschman (1958) are another two names in this field of study. Despite the exaggerated space preferences of economic operators, development in geographical growth will set in motion certain forces that will either be favourable or not. For

[4] Economies that can be internal to the firms: there are the lower average costs of production resulting from an increased rate of output. These are the economies that any single firm by its own organisation and effort can enjoy; economies external to the firm but internal to the industry: these are associated with the localisation of industry. On account of the close locational proximity of linked firms, as industry expands at a particular location, the cost per unit of output for a firm declines; economies external to the industry but internal to the urban area: these include the development of urban labour markets, access to a large market, and the provision of a wider range of services (Kenea, N.D.).

Hirschman, trickle-down effects are more favoured than polarisation effects for one set favouring convergence, and the other set divergence. Hirschman's trickle-down and polarisation effects are very much like Myrdal's spread and backwash effects. Myrdal explains the process of cumulative causation that perpetuates interregional income differentials with spread effects and backwash effects[5], which are diametrically opposed to each other functionally. Backwash effects are those forces that ensure the growth of the North at the cost of the South, whereas spread effects are those forces that enable the South to grow by ensuring the transmission of growth-promoting forces from North to South. However, the balance between these two kinds of effects is not a stable equilibrium. In Myrdal's opinion, spread effects are weaker than backwash effects. From this point of view, Myrdal (1957) draws conclusions on two perspectives: regional inequalities are much wider in poorer countries than in richer countries; and while regional inequalities have been diminishing in richer countries, the tendency has been the opposite in poor countries.

The growth theory places emphasis on various policy-oriented concepts, including propulsive firms, leading industries, polarisation and agglomeration, which results in various external economies. This emphasis promises the ensuing spread effects. According to these above-mentioned classic traditions in growth theory, spatial distribution and the innately uneven distribution of resources and population, economic growth is frequently observed as a dotted distribution, with differing distributive intensity and impact on other regions. Development for dotted regions can bring up development in other regions. By driving dominant industry, it results in a series of aggregated entities within regions, which form the regional centres of growth, promoting regional economic development. Therefore, the key to economic development is promoting industrial development. In this process, government and relevant non-government or

[5] The spread effects cause economic activities to be spread out among the different regions of the economy and thereby to the convergence among per capita regional incomes. They consist mainly of an increasing demand for the products of lagging or backward regions, and the diffusion of technology and knowledge. On the contrary, the backwash effects cause the concentration of economic activities in certain regions and thereby cause greater disparities or divergence among regions. They include labour migration, capital movement, and trade which are detrimental to the growth of the backward regions (Hummels and Yi, 2001).

non-profit industrial organisations that are gradually formed can function well as guidance and support mechanisms for industrial integration.

***Regional Integration and New Economic Geography***

Economic Geography (EG) is the study of the location, distribution, and spatial organisation of economic activities across the world. It represents a traditional subfield of the discipline of geography. However, in recent decades, EG has taken a variety of approaches to many different subject matters, including but not limited to the location of industries, economies of agglomeration, international trade, development, core-periphery theory, globalisation, and so on. These subject matters investigated are strongly influenced by the researcher's methodological approach. Among them, initially raised by Paul Krugman (1991), New Economic Geography (NEG) forms a body of research stemming from international trade theory that fundamentally attempts to explain the formation of a large variety of economic agglomeration in geographic spaces. It principally accounts for the uneven distribution of economic activity across space in terms of a combination of a variety of preference, increasing returns to scale, and transport costs (Fujita and Krugman, 1995, 2004). Moreover, most of the concepts and tools employed by the NEG, as well as the ambiguous impact of economic integration on development, were well known before the appearance of NEG. For instance, the crucial role of increasing returns to scale for agglomeration to occur is anticipated by Myrdal (1957)'s concept of "cumulative causation", the importance of externalities for localisation is firstly discussed by Marshall (1910, 1923), and the fact that economic integration might reveal detrimental effects for the economic performance of less developed regions to the advantage of those initially developed is anticipated by Kaldor (1970). Yet, the innovative contribution of the NEG consists of the rigorous formalisation of such concepts, which basically allows accounting for the dynamics of spatial clustering (and dispersing) of economic activity when trade barriers are progressively removed, which is hardly explainable with traditional theory.

As was mentioned above, the mechanism of the NEG is therefore based on a number of fundamental elements that provide a plausible theorisation of those self-reinforcing centripetal forces that pull economic activity into a location that occur and persist over time. More specifically, increasing returns to scale, monopolistic competition, transaction cost, and the occurrence of external economies collectively underpin the general functioning of the NEG models

and hence shape firms' and industries' locational or spatial behaviour. Based on four fundamental elements, by employing tools described as a slogan "D-S, iceberg, evolution and the computer"[6], there are three classes of models necessitated to be embedded into the theoretical framework of the NEG: regional models (or core-periphery models), urban system models, and international models. This respectively signifies the process of industrial agglomeration, the formation of the urban system, and the process of economic regionalisation and globalisation.

In this sight, the NEG explains the various spatial scales of economic phenomena, ranging from economic globalisation and regionalisation, the growth of international manufacturing bases, the geographical allocation of multinational enterprises, as well as processes of urbanisation. Krugman (1991) asserts that, in the context of economic globalisation, trade in manufactured goods between developed countries are very free. Each country would develop its locally specific industries, exporting goods from them and importing goods from industries not found locally. Hence, even if labour and capital cannot flow between countries, trade in goods can still "reshape economies under globalisation". Conditioned on increasing marginal return, the initial stage of globalisation sees the gradual aggregation of industries towards developed countries and regions. But, as the scale of industries expands for these countries and regions, the cost of production factors and prices of products rise, leading to a shift towards imports of productive factors and goods from other regions. If certain productive factors, for instance, labour forces, cannot flow freely, or certain goods that are crucial to consumption, like housing, cannot be traded internationally, then

[6] "D-S" refers to an ingenious analytical model introduced by Avinash Dixit and Joseph Stiglitz (1977), which takes an idea of monopolistic completion and gives it a sharper-edged formulation; "Iceberg" refers to a clever model of transportation introduced by Samuelson (1952), imagining that goods can be shipped freely but that part of the shipment "melts" in transit. It sidesteps the need to analyse transportation itself as another industry, and it also serves to simplify the description of how monopolistic firms set their prices; "Evolution" refers to how one thinks about how the economy selects one of several possible geographical structures. In the new economic geography, it essentially refers to the decision not to let the hypothetical players be that forward-looking, to assume that decisions about where to locate are based on current conditions, and therefore to rule out self-fulfilling prophecies. The geography of an economy therefore evolves in a way that reflects history and accident, but not expectations of the future; "Computer" refers to the tendency of new geography theorists to use high-technology numerical examples (reference surname and date.).

further globalisation would negate the importance of market externality. The price differential of non-flowing goods and productive factors would drive enterprises to relocate investments and labour forces to migrate to other countries and regions, initiating a process of diffusion from core developed countries and regions to less developed peripheral countries and regions, therefore promoting the industrialisation process on a global scale.

Krugman and Venables (1995) link industrial integration and factors of international trade. They point out that the trade activities of goods effectively and indirectly function as a trade of productive factors. No matter the initial allocation status for productive resources, through international trade, the production of certain goods would always converge in some industrial zones, demonstrating a general trend in the spatial concentration of manufacturing industrial activities. But, with the existence of trade barriers, with increasing domestic demand for a certain good, this country would produce locally rather than import. With an expansion in productive scales, economies of scale would play a role in promoting the competitiveness of this country in producing such a good, therefore reducing imports. In extreme cases, the production of this good would monopolise the world market, causing the country to be the dominant producer and exporter of said goods.

Thus, the contributions of the NEG are first to show how the spatial structure of an economy is determined by the interplay between the costs of transactions across space and various types of increasing returns to scale, and secondly to investigate the industrial concentration in the process of regional economic integration. Also, the NEG also explains the geographical unevenness of the economic landscape as a situation of equilibrium. In general, it emerges that the NEG's theoretical predictions have come to be tested in empirical studies in recent years and this represents a further step towards a better understanding of the implications of EG on the spatial structure of economic processes.

***Patterns of Integration and Regional Development Policy***

Regions that have reached a certain stage in the development of their economies are frequently beset by regional problems. It would be more accurate to refer to them as problems of spatial organisation. Inherited and inspired from research completed by Schumpeter, Myrdal, Hirschman, and Williamson, etc., Friedman (1966) believes that, for any nation, its regional economic system

is formed through both the core and the peripheral economic spaces. The core region constitutes a city or city clusters or its surrounding regions, a spatial system with a relatively stronger capacity for innovation and revolutionary changes. The function of the peripheral region is determined by the degree of its dependence on the economic core areas. The delineation between these two regions is determined by their relationship. More specifically, economic core regions occupy a dominant position within the system of regional economic spaces, while the economic periphery, for its lack of autonomy, remains subordinate to the core. In many cases, the regional space economy experiences four stages, from discrete equilibrium (minimal contact between regions), aggregated non-equilibrium (one region gains dominance), to a diffused stage (development of semi-periphery), and network equilibrium (bidirectional flow and full dependence), which corresponds to pre-industrial, transitional, industrial, and post-industrial stages respectively.

In the pre-industrial stage, regional economic spaces are homogenous and random, and several regional cores exist with no particular difference in their rankings or structures. Because of the lower productivity and lower stages of economic development in this period, agriculture enjoys an absolute advantage in economic structure, while industrial products account for less than 10 percent of overall products (Henderson, 1988). The differences in economic development between various regions are minimal, as most of them are at a low level of equilibrium. In line with this, regional economic space is formed by some of the independent regional cores and vast rural lands, each occupying a relatively small geographic space. Since areas within the larger region are closed off from one another, few or no essential economic ties exist.

As regions move towards transitions or the initial stages of industrialisation, industrial products would account for around 10% to 15% of overall products (Henderson, 1988). In the process of industrialisation, a region would gain developmental momentum, either through long-term accumulation or external stimulus, accelerating its pace of economic development and emerging as the economic core of the said region. The establishment of this single core would break the original low-level equilibrium of the regional economic space. At this stage, a regional space is formed, with a singular economic core that is comparatively stronger and peripheral areas that fall behind. The regional economic core, with its comparative advantage in economic development, constantly attracts factors of production from peripheral areas to itself, continually

enhancing its economic prowess, with the peripheral areas gradually falling behind, contributing to regional inequality and imbalances that become gradually more apparent.

Then, in the industrial stage, or in the mid-to-late industrial stage, regional industrial products account for roughly 25% to 50% of the total products (Henderson, 1988). With expansion in activity from regional economic cores, new economic cores would emerge elsewhere in the region. The interdependence and cooperation between the new and original economic cores would create a system of regional space economy. For each regional economic core, there exist relevant peripheral regions of varying sizes, and for each region there exist several core-periphery structures of varying scales. These core-periphery structures, modelled after each of their unique positions and relationships within the regional economic system, would become interconnected and form a regional economy space, which features greater complexity and more stability, reinforcing a positive impact on regional economic development.

At last, in the post-industrial era, economic development reaches a relatively higher level, with each area within the region forming closer and wider economic ties (Henderson, 1988). The connection between various regional economic cores and peripheries becomes more close-knit, narrowing gaps in economic developmental stages between them, leading to a new economic spatial structure where functional integration is achieved. With the gradual dissolution of physical and administrative boundaries between economic cores and peripheries, regional economics would realise developmental integration through market-led self-initiated aggregation and government-led policy implementation.

Thus, regional economic development is a non-continuous process of accumulation from a series of foundational innovative clusters that ultimately formulate large-scale innovative systems. Fast-developing metropolises often have conducive prerequisites for innovation, which often stem from cities and expand into peripheries. Hence, policymakers should prioritise the manufacturing of hi-tech products and relevant scientific and scholarly research in economic cores and should locate production activities in peripheries that are often labour-intensive with lower wages.

**Dynamic Mechanism of Integration and Regional Industrial Development**

Based on the evolutionary theory of integration and regional industrial development, we know that, under the influence of above-mentioned factor system, regional economic entities, with their

pursuit of regional economic profits, would opt for local industrial planning, and seek out regional cooperation for the purpose of regional development. So, the attainment of maximum regional economic efficiency becomes the driving force for the integration (Lo, 2004). Following overall regional economic development plans, regional advantages are fully utilised and complemented with integration. The interaction facilitates the formation of a clearly dynamic mechanism of regional industrial integration, and during specific periods, it would give rise to certain patterns of industrial regional integration.

Economic mechanism refers to the interaction and mutual constraints between elements of economic activities. Collectively, the concrete management of economic activity ensures the proper functioning of the social economy, comprised of economic agency, economic leverage, and economic policy (Lemoine, 2000). Empirically, within the economic process of production, distribution, exchange, and consumption, economic development is collectively determined by the participation and action of market forces, government and organisations (Lundvall, 1992). Therefore, the level of integration will result in an industrial level within a region. With application to the concept of industrial integration and regional integration, this shows that mechanism of integration-driven industrial development refers to the function of actors, including regional

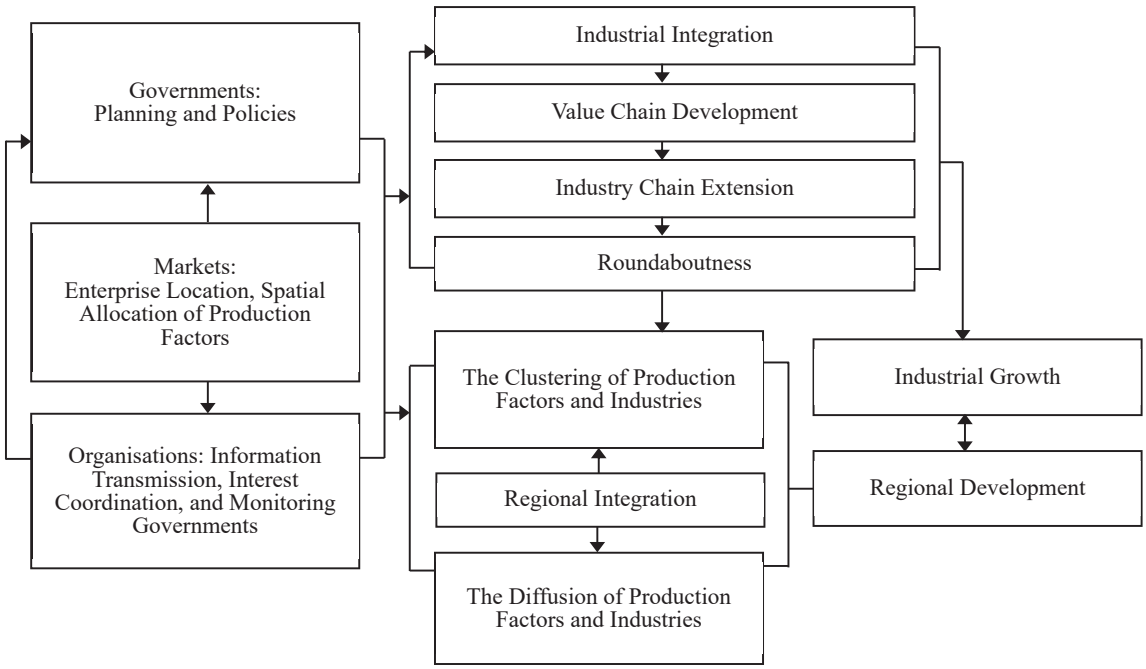


**Figure 2: Mechanism of Integration-driven Industrial Development**

Sources: Author's own figure

owners of factors of production, various local level governments within regions, a government with direct administrative power over the whole region, non-governmental organisations maintaining and promoting regional industrial development, who have a mutual relationship that connects and constrains players (Figure 2).

Markets determine the allocation of resources and spatial factors and influence how firms choose to locate. In terms of resource allocation, markets function through the transmission of information, promotion for competition, optimisation of institutions and structure, and pushing for technological advancement and efficiency improvement, among others (Lundvall, 1988). The major mechanisms include price, supply and demand, competition, and risks[7]. Resource allocation in the market economy results in economies of agglomeration, as enterprises keep attracting financial resources and talents, outputting new products and new enterprises, and quickly strengthening the economic power of units within the region. Correspondingly, the effects of diffusion are observed, since centres of agglomeration expand outwards with productive factors and economic activity, therefore accelerating economic development for peripheral and neighbouring regions, which then, in turn, feedback to and further promote the core regions. In terms of spatial allocation and the selection of firm location, the aggregation of enterprises and economic entities affects the product market. Through resource sharing, industrial matching and knowledge acquisition, external expansion and the spillover of technological expertise are achieved, accentuating the vertical division of industrial units which evolve into web-like structures (North, 1990). Accordingly, the vertical division of productive units leads to changes in the organisational structure of enterprise production and industrial structures. This leads to flexible specialisation [8] featuring modern large enterprises with multiple factories and multiple

[7] Through price signals in the market, prices reflect the demand-supply relationship, regulate production and logistics, and promote competition and innovation, in turn allowing for resource allocation and income distribution adjustment. Supply and demand affects a combination of factors of production through conflicting movements between products, labour, and social resources. Competition affects the operation of markets through price or non-price competition, preserving the performers and eliminating the less competent. Risk is a constraining mechanism for markets, acting on market entities as external pressure and regulating market supply and demand in conjunction with the competition (Walker, 1988).

[8] The key elements of the flexible specialisation concept are: 1) has multi-purpose equipment and innovation, skilled labour with an innovative mentality, uses general-purpose equipment to

departments, and a high degree of specialisation. Consequently, changes in transaction cost, the organisational structure of production at the enterprise level, as well as the organisational structure of industrial space all have an impact on how enterprises choose to locate[9]. Cost-savings and efficiency improvements arise because of geographical concentration, and then increased industrial interconnectedness and heightened resource usage ratios. This, in addition to the mutual interaction between productive organisations and enterprise location, actively pushes forward the agglomeration, transfer, and expansion of industrial spaces, greatly affecting spatial and geographic structures (Fujita and Krugman, 2004).

Governments, in grasping the overall situation and institutional planning efforts, can provide a more robust foundation for the development of regional economic units and regions, while at the same time correcting for market failures[10]. In terms of policy formulation, execution, and reassurance, the government is responsible for breaking the administrative divisions among individual regional economic units and enhancing the coordination and guidance of economic development across various regional economic units (Bresnahan and Greenstein, 1999). This is achieved through the formulation of medium- and long-term strategic planning appropriate to the industrial and regional integration of the specific space. In terms of regional infrastructure and

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produce whatever is in demand; 2) cluster of enterprises or small firm communities, the seedbed for an exchange of ideas. Physical nearness facilitates the exchange of ideas and it also makes the development of institutions and their interventions easier and more effective; 3) interaction/networking, the whole set of sub-contracting relations and collaboration efforts between small enterprises and between smaller and larger ones; 4) collective efficiency, the results of the new physical presence of other innovative producers.

[9] Geographical allocation for enterprises is usually distributed in clustered or dispersed forms. For enterprises with close economic ties, or hard-to-scale service industries such as research and development, sales, and financial companies, they tend to aggregate in core regions in order to save transaction cost and enjoy spillover benefits. For enterprises or productive manufacturing firms that can be easily scaled and are more sensitive to cost changes, they tend to locate in regions with the lowest cost of production and are thus more inclined to disperse towards peripheral regions (Fujita, Krugman, and Venables, 1999).

[10] Market failure is a situation in which the allocation of goods and services is not efficient. That is, there exists another conceivable outcome where an individual may be made better off without making someone else worse-off. They are often associated with time-inconsistent preferences, information asymmetries, non-competitive markets, principal--agent problems, externalities, or public goods.

public information network, the government can utilise public resources and administrative capacity to empower road network layouts, productive infrastructure, and ecological management. Simultaneously, it is possible to focus on electronic administrative and information and resource sharing on the enterprise level, allowing the government to build comprehensive information exchanges and sharing platforms with the premise of advancing communication network facilities (Sun, 2012). In terms of promoting productive factor flows, the government can clean up various types of legal regulations, effectively removing rules and regulatory requirements that prohibit the free flow of productive factors within a region. By establishing unified productive factor market rules and regulatory norms, protection for property rights and improvement to productive factors the market can be realised. In terms of optimising industrial layout, the government can promote a more reasonable allocation of industrial and spatial structure, according to the comparative advantages of economic geographical units. This is especially crucial because structural convergence among economic units can lead to excessive competition regionally. At the same time, by pushing for equal treatment at a regional level, the government can reduce the potential scope for vicious competition (Pheng, 1990). Thus, the government can make up for market failures through such intervention paths as improving regional infrastructure, nurturing the market system, providing a public good, reconciling economic externality, protecting competition, and preventing monopolies, thereby pushing for industrial development.

Organisations can make up for government failure through participation in public decision-making, the transmission of information, and the coordination of interests, playing their role as synergising participants. Specifically, organisations refer to non-government or not-for-profit organisations. They participate in market adjustment through non-administrative and non-market means like social ethics, public opinion, and public participation (Ram, 1986). In terms of participating in government policy formulation, organisations, for instance, industrial associations, can form specific groups that aggregate dispersed enterprises by their functions and principles, therefore representing enterprises in government decision-making. This approach not only reduces and shares the transaction cost of negotiations between individual enterprises and governments but also allows for the government to holistically consider the opinions and demands of industries in question while making policy decisions that would alter their economic spaces. In terms of information transmission, organisations are in the middle between governments and markets. They possess first-hand information on developmental trends, statistical resources, and policy changes

which can be transmitted between governments and enterprises in both directions. This reduces time delay between parties, enhances enterprises' ability to forecast market performance, and also weakens barriers and costs to policy implementation. In terms of interest coordination, especially when it comes to spatial adjustments and integration, in order to coordinate interest differentials between various economic geographical units, local governments, and enterprises, organisations can break such regional blockades and segmentation, given their special status as non-government, non-profit institutions, therefore achieving the effective adjustment and reorganisation of regional economic spatial allocation (Scott, 1988). On the other hand, by utilising their function as industrial organisers, they can promote productive differentiation through restructuring and empower regional industrial capacity. Hence, with the help of non-government or non-profit organisations, regional economic cooperation can be achieved at a low cost and with high efficiency, not only easing the administrative pressure for regional interests, but also allowing for the establishment of cross-regional enterprises.

In summary, with the participation, planning, and monitoring of non-government organisations, governments conduct unified construction for basic infrastructure, and direct factors of production and industries through unified planning and policy guidance to achieve reasonable agglomeration and the expansion of industries and spaces, including enterprises, industrial parks, and economic regions. This would eventually promote the development of local industries.

**Conclusion**

In this paper, a theoretical study on integration and regional industrial development is presented, which firstly offers key concepts and influence factors which concern integration and are composed of documentation overviews that are made from diverse perspectives. Both regional aggregation and industrial aggregation constitute the objective economic foundations for the development of regional economy and the formation of cities. Industrial aggregation leads to the formation of specialised industrial zones. Spatial aggregation of industries, on the other hand, requires economies of scale and economies of scope, both of which would lead to the emergence of new cities or further expansion from existing cities. Furthermore, factors influencing integration within economic regional spaces and implications are presented and categorised into three major types, namely regional endowments, industrial level, and institutional status. Regional industrial integration is affected by these factors, which can cancel one another out, and create interacting

effects between them. Through constant refinement, they would promote the growth of a regional economy.

Secondly, relating to industrial development, economies of scale, location theory, central place theory, growth pole theory, and core-periphery theory are employed in order to examine economic location. These theories also partially explain industrial clustering, industrial chain integration, and the spatial phenomenon in industrial activities, shedding light on the spatial allocation of industries within regions. However, as orthodox theories examine their subjects of study in static and isolated cases with too much emphasis on external factors, the theoretical study only abstracts quantitative relationships in technical spheres, without much consideration for the linkages between relevant industries. This would lead to certain limitations for understanding and decipher the allocation of regional industrial chains and the division of labour. Since the era of globalisation, world economic activity presents whole new spatial landscapes, with traditional economic theories unable to provide convincing explanations for some of these industrial spectacles. For instance, the emergence of drastically different industrial landscapes from locations of similar natural resources, or the rise to industrial centres of places without the necessary natural resource advantages. Hence, NEG and other derivative studies utilise specialisation, social networks, increasing returns, path dependency, and institutional factors as foundations for theory, enriching and contributing to the theoretical studies of industrial chain integration, formation, and distribution of industrial spaces.

Finally, given theories of integration and regional industrial development and the impact of said factors, the dynamic mechanism and interactive mechanism of integration that comes along are stated and explained. Since different influence factors lead to different integration patterns, it is necessary to theoretically elaborate the internal linkages and influential pathways of relevant factors and choices over regional industrial integration and cooperation, enabling economic entities to conduct more informed decision-making.

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# A Study on Deterministic Convergence and Asymmetric Adjustment from the Perspective of Structural Change: An Empirical Test Based on the East Asian Economic Community

*Kun Wang*[1]

**Abstract:** The Association of Southeast Asian Nations - China, Japan, and South Korea - is committed to the establishment of the East Asian Economic Community in 2020. In this context, this paper examines the output convergence of the 12 countries of the East Asian Economic Community relative to China by means of smooth structural changes and the non-linear adjustment of a unit root test, and then estimates the asymmetric convergence rate. The empirical results show that, on one hand, the relative output sequence has non-linear characteristics, and only one major event affects the mean of their output differences. On the other hand, the study shows that the economic growth of ten countries experiences deterministic convergence, and the convergence rate is asymmetric. The external factors produce a strong stickiness to the relative output of most countries.

**Keywords**: Relative output, economic convergence, asymmetric adjustment

Economic convergence is often used to describe trends in economic disparities by studying the sustainability and transformability of economic output differences between different countries or regions. The neoclassical theory of economic growth holds that economic output of different countries or regions will converge to the same level in the long run, that is, the convergence of economic growth. However, the theory of new growth questions neoclassical theory, and believes that there is technical externality that could lead to increased capital marginal revenue, which suggests the existence of the divergence of economic growth. Since the inception of the convergence theory of economic growth, scholars from all over the world have displayed high levels of enthusiasm for further empirical research. Through testing economic convergence between different countries or regions, scholars can obtain real judgement of the economic gap

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and can propose more constructive countermeasures.

Globalization and regionalization have become the major trends of world economic development, and East Asia is seeking its cross-national cooperation and development with such a background. East Asian countries are quite different in politics, economy, and culture, and the regional historical issues and territorial disputes exacerbate the mistrust between these countries. Besides, the interference of external countries into regional cooperation also makes East Asian Economic integration more difficult, which seriously slows down its progress. However, due to the geographical location of the East Asian countries, a strong complementarity exists for these countries regarding the level of economic development and economic structure. On the whole, integration has become an inevitable trend. President of China Xi Jinpin emphasized in his speech at the opening of annual meeting of the Boao Forum for Asia in 2015 that China and the Association of Southeast Asian Nations (ASEAN) countries will work together to build a closer China-ASEAN development community, and ASEAN and China, Japan, and South Korea are committed to building the East Asian Economic Community in 2020. This paper will focus on the East Asian Economic Community, study deterministic convergence from the perspective of structural change, and examine the relative economic development of each country, in hopes of providing theoretical support for the establishment of the East Asian Economic Community.

**Literature Review**

Many scholars have done a lot of work in the field of empirical testing. They have tried to verify the theory of economic convergence from different perspectives, but their conclusions have not been consistent. On one hand, early studies mostly focused on the use of traditional cross-sectional regression tests, and the results were largely consistent, mostly supporting the hypothesis of convergence (Baumol, 1986; Barro, 1991; Barro & Sala-i-Martin, 1991; Mankiw et al., 1990; etc.). However, there are many defects in this regression method. For instance, a study of Evans and Karras (1996) showed that the conclusion of a cross-sectional regression is only valid if all outputs have the same first-order autoregressive dynamic characteristics and all factors that lead to persistent differences in outputs are fully controlled for. In contrast, Bernard and Dulauf (1995) pointed out that the approach of verifying convergence by using a cross-section method to determine whether the correlation coefficient is negative is not in accordance with the definition of convergence. Thus, with the rise and application of quantitative technology, scholars began to

apply a modern time series method to test the theory. Carlino and Mills (2004) proposed the concept of random convergence; that is, relative per capita output in the long term tends to close to their respective non-time-varying compensatory differential equilibrium. Carlino and Mills further argued that random convergence is consistent with the conditional convergence proposed by Mankiw et al. (1990), when relative per capita output converges to the constant compensatory differential level. Oxley and Greasley (1995) advocated the use of the time series method in the test, and refined the convergence concept according to different circumstances in the test. They conducted a case study by comparing the economic growth of Australia, the UK, and the USA, and concluded that, when applying the time series method to the test, the rejection of convergence does not mean the divergence of growth because the country may still be in a transitional stage of convergence. Therefore, they divided economic convergence into long-run convergence and catching-up convergence. Subsequent studies have dropped the hypothesis of linear structural stability, such as the application of the structural mutation of the unit root method. More research results, which were mainly based on the unit root test, were published (Quah, 1993; Carlino & Mill, 1993; Bernard & Durlauf, 1995; Dimitris, 2006; Becker et al., 2006; etc.). Still, whether the theory of convergence is supported remains unclear.

It is also worth noting that, compared with research on economic convergence between developed countries, data on convergence in East Asia is relatively limited, and a unanimous conclusion has yet to be reached. Lim and McAleer (2004) pointed out that there was insufficient evidence of economic convergence in the five ASEAN countries after four tests, including the unit root test and the co-integration test. Lee et al. (2005) used the structural change unit root test to find that, of the five ASEAN countries, economic convergence only exists in Japan and Singapore. Ismail (2008) used a panel model to find evidence of economic convergence amongst the five ASEAN countries. As for the research results of Chinese scholars, Liu et al. (2009) conducted a grouping test on the economic convergence of eight countries in Asia and found that the economic growth path between China and underdeveloped countries is gradually widening and converging to the level of developed economies. Guo (2013) believes that there is β convergence and σ convergence in the "10+3" countries of East Asia.

In this paper, by taking reference from Christopoulos and Ledesma's (2011) study on the asymmetric and non-linearity of economic growth equilibrium path regression, the author chooses

smooth structure change unit root test method, proposed by Becker et al. (2006), to study the economic convergence of member countries of the East Asian Economic Community.

**The Definition of Deterministic Convergence**

Judging whether economic convergence exists between countries or regions can be achieved by examining the time series of the per capita output disparities. Bernard and Durlauf (1995, 1996) presented a definition of deterministic convergence as follows:

***Formula 1***

$$\lim_{k\to\infty} E(y_{i,t+k} - y_{j,t+k} \mid I_t) = 0$$

Here y represents per capita output, and i and j respectively represent different countries. It can be seen that economic convergence requires that the time series of the per capita output gap is stable and zero-mean.

And the unchangeable-over-time Wold decomposition form is:

***Formula 2***

$$y_{i,t} - y_{j,t} = \kappa_{i,j} + \sum_{r=0}^{\infty} \lambda_{i,j,r} \varepsilon_{i,j,t-r}$$

If the relative income is compatible with Formula 2, Formula 1 will be valid. In other words, convergence is determined. Here $\varepsilon_{i,j,t-r}$ is the error term and $\kappa_{i,j} = 0$. $\lambda_{i,j,r}$ is square plus (Bernard & Durlauf, 1996).

After an analysis of the above definition, it seems that relative output which satisfies the zero-mean and remains stable are too strict as convergence requirements (Pesaran, 2007). In view of this, a new concept of deterministic convergence emerges, which only requires the time series of the relative economic output to be stable. Specifically, *I* can be expressed as follows.

***Formula 3***

$$\lim_{k\to\infty} E(y_{i,t+k} - y_{j,t+k} \mid I_t) = \alpha_{ij}$$

Here, $\alpha_{ij}$ is a constant parameter which may be constrained by a break point. In this case, $\kappa_{i,j}$ in Formula 2 may be non-zero, and the difference in average growth rates of the two countries' economic outputs is stable and zero-mean.

**Research Methods**

In this paper, the basic idea of the model is to carry out Fourier series expansion of the deterministic trend of economic growth, use a trigonometric function to describe the non-linear characteristics of the deterministic part of the variables, and analyze the variables through a smooth transfer function which is used to describe the asymmetric adjustment of deterministic trend. Specifically,

First, use the following model to describe a random variable $y_t$.

***Formula 4***

$$y_t = \delta(t) + v_t$$

Here $v_t \sim N(0,\sigma^2)$. And $\delta(t)$ is a deterministic mean, changeable over time. According to studies by Becker et al. (2006), the Fourier series expansion is now used to approximate the unknown $\delta(t)$.

***Formula 5***

$$\delta(t) = \delta_0 + \sum_{k=1}^{G} \delta_1^k \sin(\frac{2\pi kt}{T}) + \sum_{k=1}^{G} \delta_2^k \cos(\frac{2\pi kt}{T})$$

Here, $k$ is the frequency of the Fourier function, $t$ is the time trend, $T$ is the sample size, and $\pi = 3.1416$. If there is at least one frequency *k* in $k = G_1, \Lambda, G_M$ ($G_1 > 0$) that is rejected by the original hypothesis $\delta_k = 0$, the non-linear part of Formula 5 can fully explain the deterministic

part of $y_t$ and there is at least one structural change in the data generation process. And under the setting of this model, the breakpoints are described as a smoothing process rather than horizontal changes, but both have the same economic meaning.

Given that Ludlow and Enders (2000) argued that a single frequency in empirical application is sufficient to approximate the Fourier expansion, Formula 5 can be simplified as:

***Formula 6***

$$\delta(t) = \delta_0 + \delta_1 \sin(\frac{2\pi kt}{T}) + \delta_2 \cos(\frac{2\pi kt}{T})$$

Based on the ideas of Becker et al. (2006), this paper uses Formulas 4 and 6 to choose the optimal value of $k$ by using the Bayesian Information Criterion (BIC) within the frequency range $[0.1, 0.2, \mathrm{L}\ , 4.9, 5]$. Set the original hypothesis $H_0 : \delta_1 = \delta_2 = 0$ to test the alternative hypothesis $H_1 : \delta_1,\ \delta_2$ are not equal to 0 at the same time. And then compare with the Monte Carlo simulation results listed by Becker et al. (2006), that is, the empirical distribution table approximates this test, and observe the $F$ -statistic.

In addition, we can get another layer of information from the Fourier transformation. If the selected frequency is an integer, then this function may make a smooth transition temporary. Otherwise, if the frequency is in fractional form, it means there is a lasting change because at this time this function cannot finish a complete cycle of oscillation. In this case, the model should be:

***Formula 7***

$$y_t = \delta_0 + \delta_1 \sin(\frac{2\pi kt}{T}) + \delta_2 \cos(\frac{2\pi kt}{T}) + v_t$$

The original hypothesis of the unit root can be expressed as:

$$H_0 : v_t = \mu_t, \mu_t = \mu_{t-1} + h_t$$

Here, $h_t$ is the zero-mean stationary process. The statistic test is conducted through the following three steps:

The first step involves finding the optimal frequency $k^*$ and using the least squares method to estimate the non-linear deterministic part of Formula 7. Then the ordinary least squares (OLS) residual is calculated.

$$\hat{v}_t = y_t - [\hat{\delta}_0 + \hat{\delta}_1 \sin(\frac{2\pi k^* t}{T}) + \hat{\delta}_2 \cos(\frac{2\pi k^* t}{T})$$

In the second step, the unit root test is performed on the OLS residuals obtained in the first step. Firstly, by trying the linear unit root test.

***Formula 8***

$$\Delta v_t = \alpha_1 v_{t-1} + \sum_{j=1}^{p} \beta_j \Delta v_{t-j} + u_t \qquad \text{Formula 8}$$

Since the mean regression may exhibit asymmetric characteristics, the following non-linear model is used for the unit root test.

***Formula 9***

$$\Delta v_t = \rho v_{t-1}(1 + \exp(\theta v_{t-i}))^{-1} + \sum_{j=1}^{p} \beta_j \Delta v_{t-j} + u_t \quad i = 1,2,\Lambda\ ,L$$

Here, the recognition limit is $\theta > 0$ and $u_t$ is a white noise error term.

Formula 8 is the standard Augmented Dickey-Fuller (ADF) and the convergence rate is assumed to be symmetrical. Firstly, the Fourier function is used to describe the time sequence structure and then perform the standard linear ADF test. It is called the Fourier-ADF test, namely the FADF test. Referring to the FADF threshold table given by Christopoulos and Leon-Ledesma

(2009), the original hypothesis of the unit root can be rejected if the t value of coefficient $\alpha_1$ in the test exceeds the FADF threshold.

Formula 9 is the stability test proposed by Park and Shintani (2009), which means that the adjustment rate of the variable of the equilibrium level deviation is asymmetric and depends on the distance from the equilibrium deviation position. It follows a logistic smoothing transition autoregressive process (LSTAR). The logistic function considers different effects of positive and negative deviations from equilibrium, which implies that the velocity of mean regression depends on the relationship between the transition variable and a stable state. This setting conforms to the theoretical form of convergence rate outside a steady state. The convergence rate near the steady state ($v_{t-i} = 0$) is equal to $0.5\rho$. When $v_{t-i} < 0$ ($v_{t-i} > 0$), it rises (falls). Here, $v_{t-i}$ is the value after removing the mean from the relative output, which means the deviation of relative output to the equilibrium position.

To test the existence of a unit root of the original hypothesis, Park and Shintani (2009) proposed the following *t*-statistic minimum formula.

***Formula 10***

$$\inf - t = \inf_{\theta \in \Theta} T(\theta)$$

Here, the function $T(\theta) = \dfrac{\hat{\rho}(\theta)}{s.e.(\hat{\rho}(\theta))}$ is to test the $t$ value of the original hypothesis $H_0 : \rho = 0$, and $\Theta = [\underline{\theta}, \overline{\theta}]$ and $0 < \underline{\theta} < \theta < \overline{\theta}$. The value of $\theta$ can be estimated in the parameter space $[\frac{1}{10}Q, 10^3 Q]$ through $\hat{\theta} = \arg\min_{\theta \in \Theta} T(\theta)$, here $Q = (\dfrac{1}{\sqrt{\sum_{t=1} v_t^2 / T}})$. Therefore, $\inf - t$ is the minimum value of the t-statistic (negative) calculated by the unit root test within the range of the value of the transition speed parameter. If the original hypothesis of the unit root in the second step of the test is rejected, then proceed to the third step, that is, set the original hypothesis $H_0 : \delta_1 = \delta_2 = 0$ to test that the alternative hypothesis H1: $\delta_1$, $\delta_2$ is not zero at the same

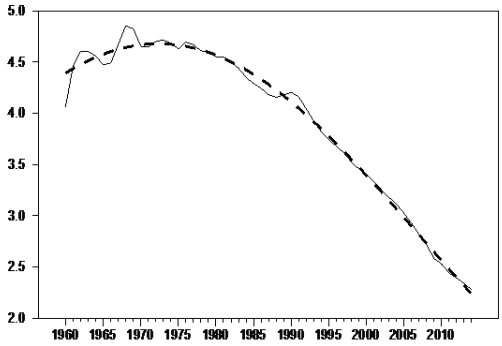
time. If the original hypothesis is rejected in the test, the variable is considered non-linearly stable.

**The Data Sources and Empirical Results**

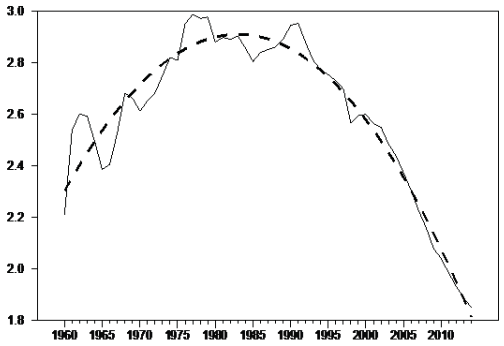
The subject of this study is the East Asian Economic Community, which is composed of 13 countries. In terms of relative output per capita, this paper examines the deterministic asymmetric economic convergence between China and the other member countries of the East Asian Economic Community, that is, Japan, South Korea, and the ten countries of ASEAN, namely Malaysia, Indonesia, Thailand, the Philippines, Singapore, Brunei, Vietnam, Laos, Myanmar, and Cambodia. However, due to data availability and other issues, the time span of the data selected in this paper is roughly the same, but is slightly different (see Column 8 in Table 1). The data in the empirical analysis is based on the logarithmic form of the relative output per capita of the 12 countries of the East Asian Economic Community to China, which is derived from the constant US dollar GDP per capita in 2005. The data on Myanmar are from the United Nations Statistics Division and the other data from the World Bank Online Database.

The figure below (Figure 1) shows the actual value (solid line) of the GDP per capita level of each country to China and the fitted value (dashed line) calculated using the Fourier function. It can be seen from Figure 1 that the Fourier function can be fitted to the relative per capita output sequence with a smooth structure change. Apparently, these countries show a very different form of relative per capita GDP. From the general trend point of view, the relative per capita output of some countries to China shows a slight increase and then continues to decline. And the general tuning point appears in the 1970s or 1980s, such as with Japan, South Korea, Malaysia, Indonesia, Thailand, Singapore, and Myanmar. Particularly, the relevant data of Indonesia, Thailand, the Philippines, and Myanmar gradually changes from positive to negative, which indicates that China has caught up and even exceeded the four countries in terms of economic development. In contrast, for Japan, South Korea, Malaysia, and Singapore, the relative per capita output to China has been greater than 0, which means their per capita GDP has been higher than China's. But considering the trend of economic development, the gap between China and the four countries is continually reduced, especially so for the gap between China and Malaysia. In addition, for Brunei, Vietnam, Laos, and Cambodia, the GDP per capita relative to China has the trend of significantly and monotonically declining. Particularly, the GDP per capita of Brunei relative to China has been higher than China, but the gap is becoming smaller and smaller. For Vietnam, Laos, and Cambodia,

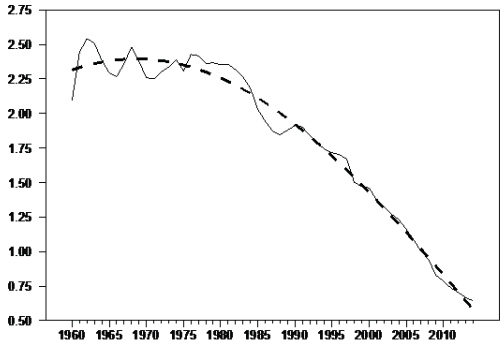
the relative GDP per capita to China has been lower than China, and the gap between China and the three countries is growing. The time span of the relevant data for the four countries is shorter. During the same shorter time span, comparison with the other countries showed a monotonically decreasing trend for all countries, confirming the rapid economic development of China and its great economic achievements. In addition, from the shapes of the curves in the figure, we can find their common characteristic, which is the possibility of smooth structural changes mostly occurring in the 1970s and 1980s, when China had reformed its economic system and policy, applied the reform and opening up policy, and started economic exchanges with East Asian countries. To sum up, the relative output does not show a clear and consistent steady state, and instead is subject to the significant impacts of structural changes. Therefore, when we conduct the convergence test, we must consider that these factors improve the stability of the test and ensure the reliability of the conclusions.



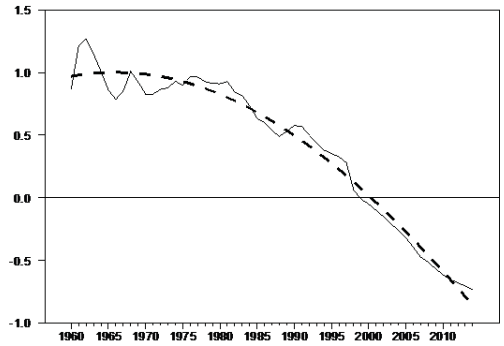

Japan



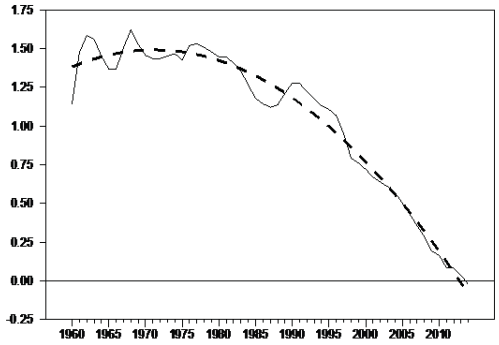

South Korea



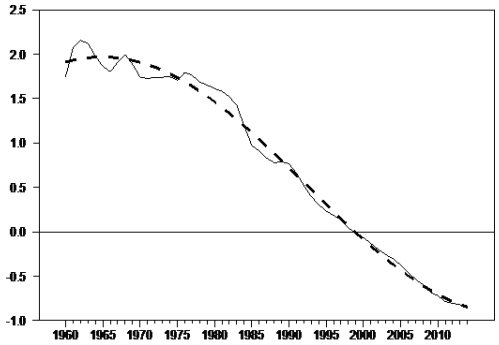

Malaysia



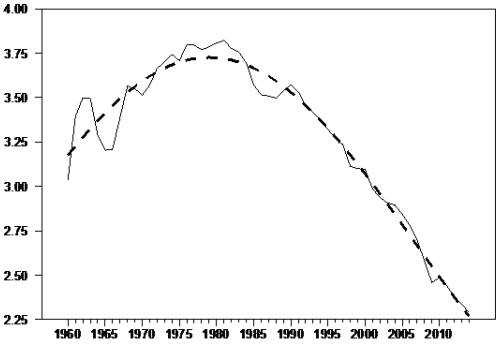

Indonesia



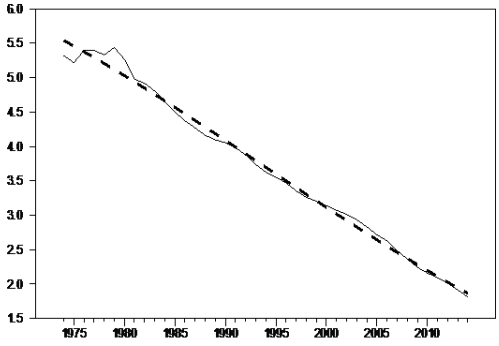

Thailand



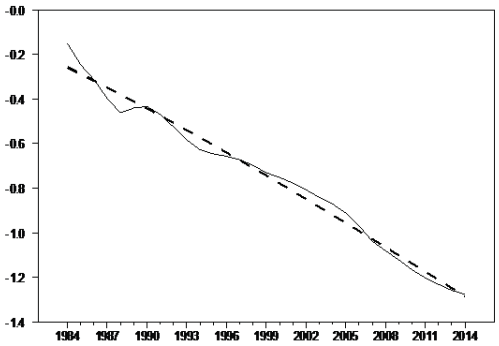

The Philippines



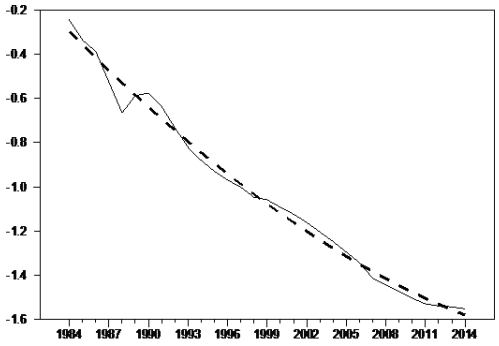

Singapore



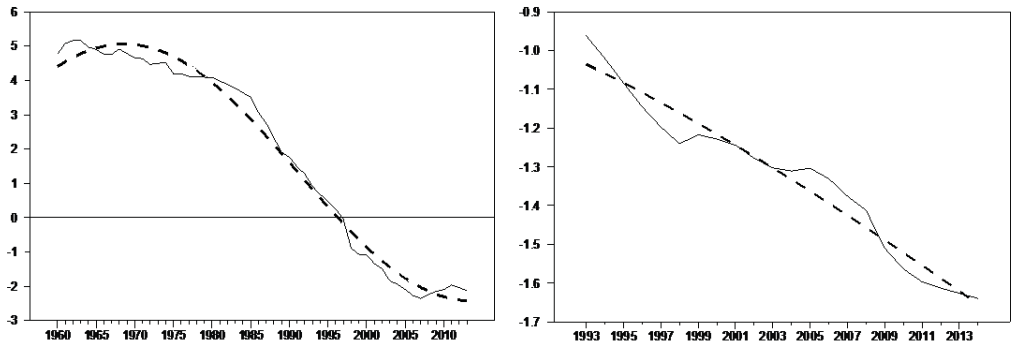

Brunei




Vietnam




Laos




Myanmar Cambodia

**Figure 1. The actual value (solid line) and the fitted value (dashed line) of the relative GDP per capita of member countries of East Asian Economic Community.**

In the case of fitting the relative output sequence through the Fourier function, this paper takes the maximum value of $k$ as 4 by referencing the study of Christopoulos and Ledesma (2011), and searches step by step for the optimal frequency, starting from 0.1. The results of the optimal value of $k$ are shown in Column 1 in Table 1. Results show that the optimal frequency of the relative per capita GDP sequence of the 12 countries of the East Asian Economic Community is less than 1, which means that the structural change for all sequences is only one, and the smaller the value of $k$ is, the longer the break point lasts, indicating that the effect of this event on the region's economy is more lasting and, vice versa, the larger the value of $k$ is, the shorter the effect is. In addition, by examining the joint distribution of sine and cosine, that is, the value of $F_\mu(\hat{k})$ in Column 2 in Table 1, this indicates that the Fourier function can well characterize the relative GDP per capita sequences in these regions, implying that these sequences conform more to the non-linear mean regression process than the linear one.

| Country | (1) $\hat{k}$ | (2) $F_\mu(\hat{k})$ | (3) FADF | (4) $\theta$ | (5) $\rho$ | (6) Convergence rate | (7) $\inf - t$ | (8) Time span |
|---|---|---|---|---|---|---|---|---|
| Japan | 0.4 | 2653.3346 | -6.8762*** | 2.6833 | -1.2252 | 61.25% | -7.0315*** | 1960-2014 |
| South | 0.1 | 414.5910 | -3.6563* | 1.7234 | -0.9681 | 48.40% | -5.5803*** | 1960-2014 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Korea | | | | | | | | |
| Malaysia | 0.3 | 1203.3065 | -4.8544*** | 4.1578 | -0.9149 | 45.74% | -5.0296*** | 1960-2014 |
| Indonesia | 0.2 | 909.3853 | -5.0971*** | 2.1590 | -0.7245 | 36.22% | -4.9918*** | 1960-2014 |
| Thailand | 0.1 | 869.2023 | -5.3556*** | 3.2287 | -0.8100 | 40.50% | -5.5713*** | 1960-2014 |
| Philippines | 0.5 | 2719.2677 | -5.09439*** | 2.2552 | -0.7288 | 36.44% | -5.1303*** | 1960-2014 |
| Singapore | 0.5 | 684.7314 | -6.3417*** | 4.2326 | -1.3036 | 65.18% | -7.2769*** | 1960-2014 |
| Brunei | 0.2 | 2298.1053 | -4.6747*** | 3.8362 | -0.8608 | 43.04% | -4.1237** | 1974-2014 |
| Vietnam | 0.1 | 924.8595 | -2.9429 | 8.6608 | -0.6475 | 32.37% | -4.2295** | 1984-2014 |
| Laos | 0.1 | 1333.3112 | -4.4054** | 5.4250 | -1.3681 | 68.40% | -5.1845*** | 1984-2014 |
| Myanmar | 0.6 | 1838.0944 | -1.7836 | 0.6904 | -0.3125 | 15.62% | -2.5256 | 1960-2013 |
| Cambodia | 0.1 | 201.5718 | -3.0971 | 5.3084 | -0.6997 | 34.99% | -3.1316 | 1993-2014 |

**Table 1. The unit root test of relative output based on Fourier function.**

**Note:** (***), (**), and (*) means that the original hypothesis of the unit root is rejected at the significance level of 1%, 5%, and 10% respectively. The underscore represents that the original linear hypothesis is rejected at the traditional significance level. The $F_\mu(\hat{k})$ test is distributed as a $F$-statistic under the null hypothesis with 2 degrees of freedom. The critical value is listed in the Table 1 of Becker et al. (2006). The optimal lag is selected through SBIC (the Schwarz Bayesian Information Criterion).

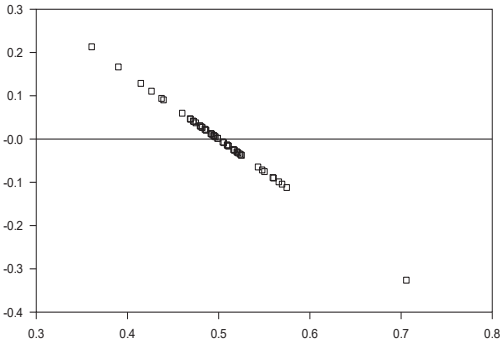
The smoothness of the residuals obtained from the Fourier function is then checked. The FADA statistic (see Table 1, Column 3) shows that seven countries (Japan, Malaysia, Indonesia, Thailand, the Philippines, Singapore, and Brunei) rejected the original hypothesis at the significance level of 1%; one country (Laos) rejected the original hypothesis at the significance level of 5%; and one country (South Korea) rejected the original hypothesis at the significance level of 10%. The results show that, if regarding the economic convergence process as a symmetric convergence process, only taking structural change with an unknown form and time point into consideration, convergence exists for the nine countries of the East Asian Economic Community.

If taking the structural change with unknown forms and time points, as well as the convergence rate into the analysis framework, the LSTAR unit root test of Formula 9 is used. The test is to calculate the minimum *t*-statistic of Formula 10 for the transfer variable $v_{t-i}, i = 1,2,3,4$. And finally, a test result that minimizes the sum of squares of residuals (SSR) is selected.

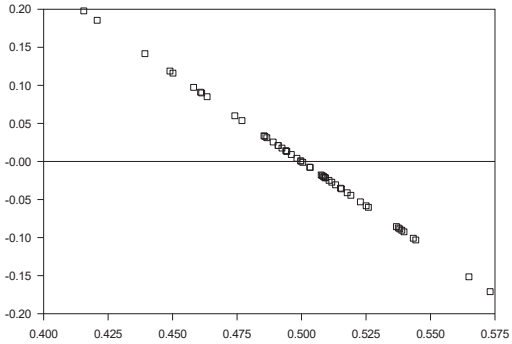
Column 7 in Table 1 lists the test results. It can be seen that, amongst the 12 countries, , only two countries (Myanmar and Cambodia) cannot reject the original hypothesis of the unit root in terms of relative per capita GDP, both countries showing a trend of relative economic divergence. Eight countries (Japan, South Korea, Malaysia, Indonesia, Thailand, the Philippines, Singapore, and Laos) reject the original hypothesis of the unit root at the significance level of 1%, and the other two countries (Brunei and Vietnam) reject the original hypothesis at the significance level of 5%. The results show that the above-mentioned ten countries of the East Asian Economic Community achieve relatively stable economic performance and convergence, if one takes two aspects into consideration at the same time, that is, the sequence's structural changes with unknown forms and time points, and the asymmetry of the convergence rate. Column 5 in Table 1 lists the estimated value of parameter $\rho$ in detail. Therefore, we can derive the average convergence rate, namely $\rho/2$ (see Column 6 in Table 1.) when the relative GDP per capita is close to the mean (that is, close to the steady state, $v_{t-i}$ is nearly zero). Of the estimated value of $\rho$, from the -1.3681 of Laos to the -0.3125 of Myanmar, the average is -0.8803, indicating that the overall average convergence rate is 44.02% as the relative GDP per capita of each country is close to the steady state, and Laos is the fastest, while Myanmar is the slowest. The parameter $\theta$ reflects the transition speed of the LSTAR process and accurately characterizes the speed of the transfer variable between the two states. As can be seen from the estimated values in Column 4 of Table 1, most estimated values of $\theta$ are not large, indicating that the external shocks show a strong stickiness to the relative output effects of most countries; that is, the transition rate between two states is relatively slow. And relatively speaking, the estimated value of $\theta$ for Vietnam is greater, which means a faster rate of transition.

In addition, we can get the conversion function ($-\rho(1+\exp(\theta\varepsilon_{t-d}))^{-1}$) of each country during each time period through the estimated values of $\rho$ and $\theta$, namely the instantaneous convergence rate. If one draws the trend of the convergence rate of the relative GDP per capita of the member countries of the East Asian Economic Community, one will get the relevant scatter plot (see Figure 2). This shows the scatter plot of the convergence rate ($-\lambda(1+\exp(\theta\varepsilon_{t-d}))^{-1}$) relative to the equilibrium deviation value ($\varepsilon_{t-d}$), where the convergence rate exhibits an apparent

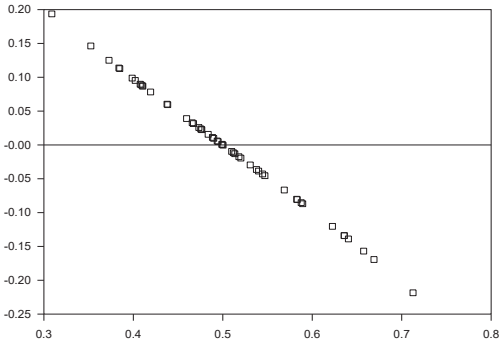
asymmetric characteristic, and the convergence rate at the steady state ( $\varepsilon_{t-d} < 0$ ) is faster than that at the steady state above ( $\varepsilon_{t-d} > 0$ ).



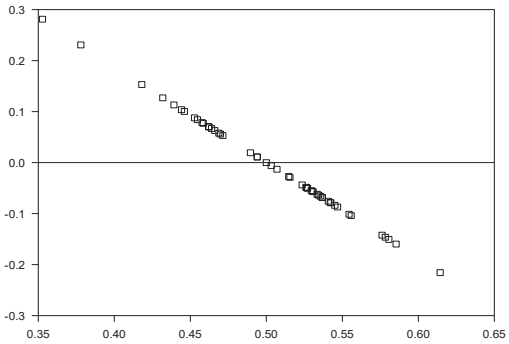

Japan



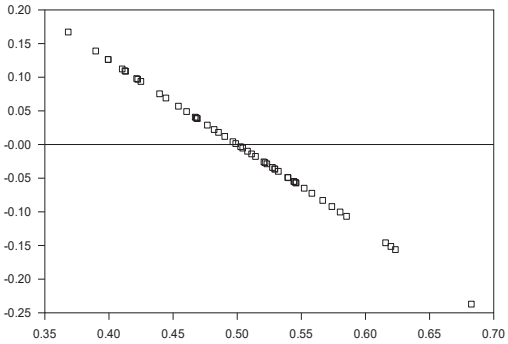

South Korea



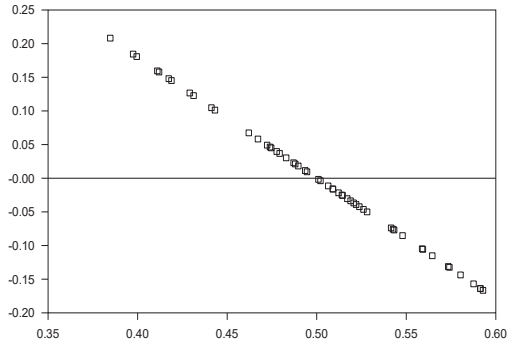

Malaysia




Indonesia




Thailand




The Philippines

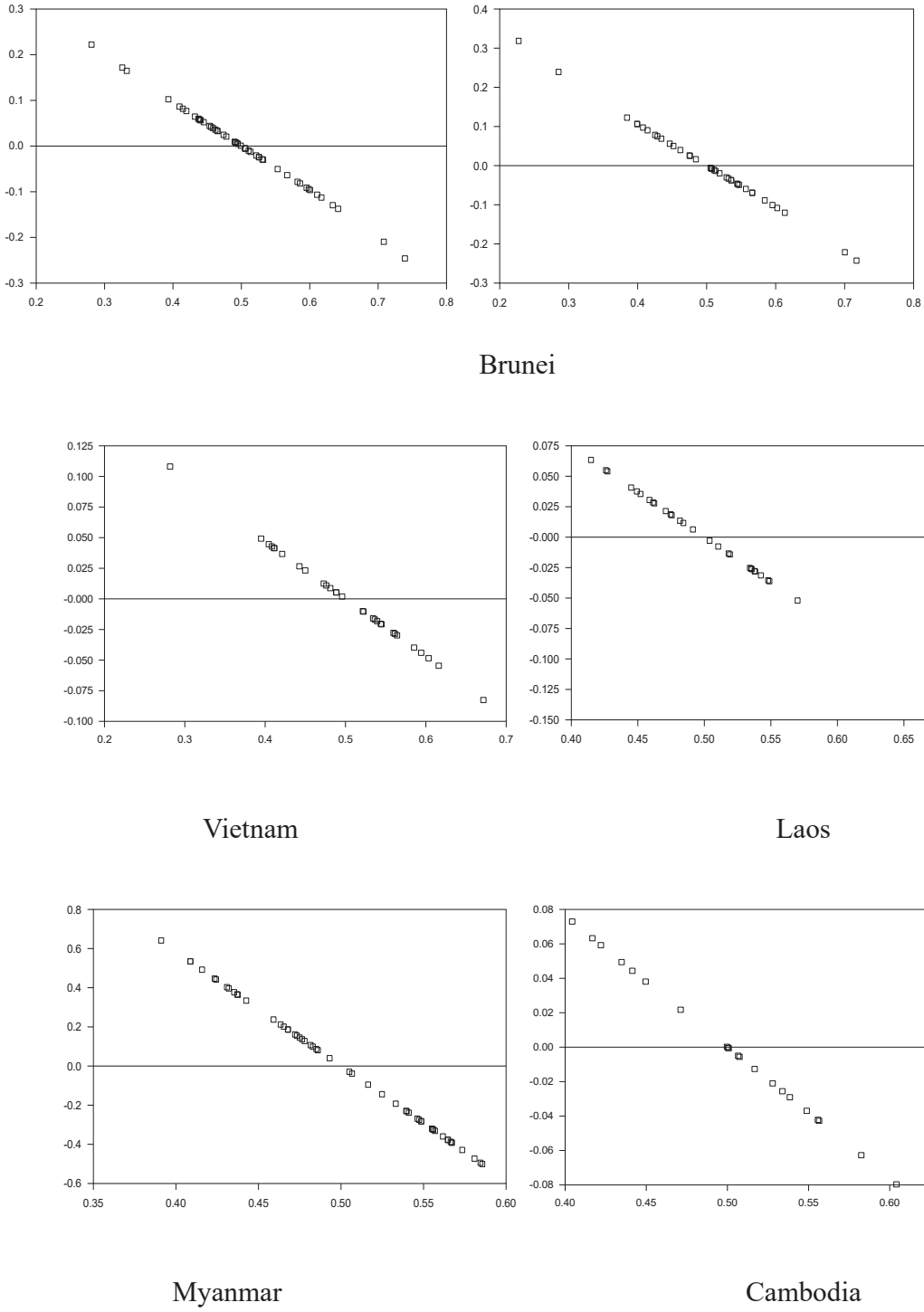



**Figure 2. The relative GDP per capita of the East Asian Economic Community: convergence rate (horizontal axis) versus equilibrium deviation (vertical axis).**

**Conclusion and Analysis**

Based on the research of Christopoulos and Ledesma (2011) and the quantitative method proposed by Becker et al. (2006), and Park and Shintani (2009), this paper uses a non-linear model to test the economic convergence of the member countries of the East Asian Economic Community. These tests can be regarded as an improved method based on the studies of Perron (1990), Zivot-Andrews (1992), and Bai and Perron (1998), which further takes the asymmetric characteristics of the adjusted rate into consideration. It has the advantage of being able to determine whether the effects of external factors on economic variables are persistent or temporary. Results show that the 12 countries of the East Asian Economic Community have non-linear time characteristics compared with China's per capita GDP, and nine of them show a deterministic convergence of their symmetric convergence rates. The economic growth of ten countries is the deterministic convergence of the asymmetric convergence rate, and most of them exhibit stickiness to economic shocks. This paper argues that, within the range of the sample, the impact of some major events will result in an asymmetric adjustment of the mean regression rate, which it is impossible to characterize by the linear model. Besides, this paper also proves that the structural breakpoints and asymmetric adjustment rates are extremely important in analyzing the relative output convergence. These breakpoints can explain most of the cases that reject the original hypothesis of the unit root. And the asymmetric adjustment caused by significant shocks is also indispensable for the analysis of the convergence state of countries (those which reject the original hypothesis).

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# China, Global Governance, and Hegemony: Neo-Gramscian Perspective in the World Order

*Bo Peng*[1]

**Abstract:** This paper intends to provide an analytical framework to interpret the dynamic nexus between China and the world order from the perspective of the neo-Gramscian international relations school. It supposes that the post-war world order is mainly shaped by and reflected in the architecture of international/global governance. This supposition is largely built on the conceptual nexus between global governance, hegemony, and world order. Then, through the lens of global governance, the paper contends that the post-war historical dynamics between China and the world order can be divided into three periods: first the period of hostility and rejection (1949-1971), second the period of acceptance and integration (1971-2008), and third the period of leadership and contribution (2008 up to now). On the basis of such chronology, the paper attempts to deliver a historical and holistic interpretation of China's changing role in the post-war world order. By distinguishing the roles China played and is playing in different historical periods, and by elaborating this dynamic historical process through a holistic view, this paper concludes that China is currently serving as a proactive rule-shaper rather than a disruptive revisionist or a stubborn vindicator of the existing world order.

**Keywords:** The rise of China, world order, global governance, Neo-Gramscian international relations school

## Introduction

The rise of China is widely recognized as one of the most significant phenomena in international relations in the beginning of the 21st century. During the last four decades, especially in the era of post financial crisis since 2008, China's dramatic rise and its significance to the world economy can be observed from the following aspects: (1) in 2009, according to a statistic from the International Energy Agency, China became the world's biggest energy user by consuming 2.252 billion tons of oil equivalent, which exceeded the US' 2.170 billion tons (Swartz & Oster, 2010); (2) in 2010, China replaced the United States as the largest manufacturing power (with a 18.9% share of world's manufacturing activities) and continuously widened its lead in the consecutive years (Mechstroth, 2015); (3) in 2013, with its trade surplus rising by 12.8% to almost $260 billion,

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China became the world's largest trading nation by overtaking the US (Monaghan, 2014); (4) in 2014, as the International Monetary Fund (IMF) estimated by using purchasing power parity, China became the world's largest economy, worth $17.6 trillion compared to the US' $17.4 trillion (Duncan & David, 2014); and (5) in 2015, the IMF added the Chinese Yuan to its Special Drawing Rights (SDR) basket with the Yuan having a 10.9% weighting in the basket, which is just beneath than the US dollar's 41.73% and the Euro's 30.93% (Mayeda, 2015).

The above achievements mainly resulted from Deng Xiaoping's "Tao Guang Yang Hui" (韬光养晦) strategy (keep a low profile and be self-restrained) which emphasizes China's compliance with international rules and integration in the international system. Furthermore, with the increasing deficits of existing global governance and the rise of a large number of emerging powers, China is ushering in a historical opportunity to take more international responsibilities and participate in the rule-making process of international society in accord with China's "You Suo Zuo Wei" (有所作为) strategy (make a difference).

China's strategic transformation has been manifested in a series of proactive actions: (1) To consolidate the core position of the G20 in global economic governance, leading the G20 to become a long-term governance mechanism; (2) to establish the New Development Bank (BRICS' Bank) and the Asian Infrastructure Investment Bank (AIIB), improving the pattern of global financial governance; (3) to propose the "Belt and Road Initiative", constructing a broader framework for international cooperation; (4) to promote that the Paris climate agreement is reached, reflecting the responsible role of a great power; (5) to complete the construction of free trade areas, promoting regional economic integration; and (6) to openly defend globalization and the free market economy, etc.

China's practical foreign policy and its ambitious strategy to be a rule-maker rather than a rule-follower has triggered lots of debate with regard to a remarkable question – ***what sort of implications would be brought about by the rise of China to the existing world order? What role is China playing and what role will it play in the global governance structure?***

Power transition theory and offensive realism predict that the rise of China will bring instability to the existing world order. They argue that states are sensitive to their relative

capabilities and will seek to change the international order in ways that better reflect their newly earned power and national interests. When weak, they may reluctantly accept the constraints placed upon them, but once strong enough, they tend to wield their power to change the status quo (Gilpin, 1981; Measheimer, 2014; Organski & Kugler, 1981). Some even declare a new Cold War in which China replaces Russia, recalling that the New Middle Empire has sophisticated nuclear facilities, that it has the largest army in the world, and its budget for defense increases by 10% per year. Then, China is still, despite some recently discovered relative freedom, a totalitarian and so threatening power. In addition, China has problems with human rights, pointing out its many repressive actions, large internal cleavages, a severely altered natural environment, and a still incipient social security system.

Liberalism and constructivism are confident that China will and can be socialized to conform to existing international rules, and consequently, a stronger China can make greater contributions and provide public goods. They point to the strength of international institutions and norms as sufficient constraints on rising powers such as China, which over time will change and adapt lest its aggressiveness invites counterforce and becomes detrimental to its own self-interests (Ikenberry, 2012; Johnston, 2007). They believe that international institutions can help perpetuate US dominance. By strengthening these institutions, the United States can "lock in" the hegemonic order that it built after the Second World War and thereby ensure that it persists after unipolarity ends.

However, this paper argues that the two mainstream international relations theories are only partly applicable to the analysis of the relationship between China and the world order. In other words, each of them did have strong explanatory power for a particular historical period respectively, but both of them lack of a historical and relational interpretation of the contemporary interaction and historical dynamics between the two. As a consequence, the paper intends to provide a theoretical framework on the basis of the core concepts and notions of neo-Gramscian international relations school, to interpret the dynamic nexus between China and world order since the establishment of the People's Republic of China (PRC). The historical and relational interpretation of this paper would provide an alternative perspective for understanding the rise of China and its impacts on the existing world order.

**Methodological Consideration: Neo-Gramscian School**

It is unquestionable that US academia has, so far, dominated the development of international relations theory. Perhaps for ideological reasons, although Marxist scholars did not lack international relations theory, they were excluded from the debate dominated by the mainstream international relations theories. Before the 1970s, Marxist international relations theory mainly explored the capitalist financial empire, dependency and the world system, lacking dialogue with mainstream international relations theory. Since the 1970s, with the rise of international political economy, Marxist thoughts and ideas concerning international affairs have been recognized as a significant source for international relations theory. Among these thoughts, the neo-Gramscian school has received the most attention.

The theoretical foundation of the neo-Gramscian school was rooted in the political theory of the Italian left-wing thinker Antonio Gramsci (1891-1937), whose thinking was widely applied in post-war social science research. Robert W. Cox, from York University, Canada, further applied Gramsci's ideas to international relations. Other scholars, such as Stephen Gill, Andreas Bieler, Kees van der Pijl, and Mark Rupert, also adopted Gramsci's views and used them to study the phenomena of regionalization and globalization. These international relations scholars are called the neo-Gramscian school or the Italian school.

The neo-Gramscian school intends to integrate multiple research levels, including the national level and social level, political level and economic level, and international level and domestic level, etc. By so doing, it attempts to provide another perspective for international relations theory. In order to achieve its theoretical purpose, Cox introduced a method of historical structure, from the dialectical relationship among three elements of ideas, material capabilities, and institutions, to analyze society, state, and world. With the development of international political economy, increasing numbers of scholars attach importance to the influence of transnational actors on international relations. In the meantime, the method of historical structure also meets the theoretical requirement of political and economic integration. Moreover, since the 1970s, mainstream international relations theory and international political economy have been heatedly discussing related issues regarding the American hegemonic persistence and post-hegemonic order. Against this background, the neo-Gramscian school's unique view of hegemony and the world order has contributed a lot to the diversity of international relations theory.

In 1981 and 1983, Robert W. Cox published two influential articles in *Millennium*, which laid the foundation for the neo-Gramsican international relations school. According to Cox, neo-Gramscian international relations theory consists of a number of key concepts and notions, such as hegemony, war of maneuver, war of position, passive revolution, and historical bloc, etc. Through these two articles, Cox not only made a huge contribution to raising the concept of hegemony from the national level to the international level, but also he developed a method of historical structures (Cox, 1981) which he defined as,

> A picture of a particular configuration of forces. This configuration does not determine actions in any direct mechanical way but imposes pressures and constraints. Individuals and groups may move with the pressures or resist and oppose them, but they cannot ignore them. To the extent that they do successfully resist a prevailing historical structure, they buttress their actions with an alternative, emerging configuration of forces, a rival structure (Cox, 1981: 135).

In order to make the method of historical structures intelligible and applicable, Cox introduced three categories of forces interacting reciprocally in this structure. These forces are material capabilities, institutions, and ideas. To be specific, material capabilities refer to the productive and destructive potentials which are expressed in dynamic form and accumulated forms; ideas consist of two kinds, while the intersubjective meaning indicates the shared notions of the nature of social relations throughout a particular historical structure, the collective images implies several - even opposing - views regarding the legitimacy of existing power relations and the meanings of justice, etc.; institutions, in Cox's viewpoint, is a means of stabilizing and perpetuating a particular order. Institutions do not only reflect the established and emerging power relations, but they also can promote collective images in line with these power relations.

Furthermore, according to Cox, the method of historical structures is applied on three levels – social forces, forms of state, and world orders – which are interrelated. Each of the three levels can be regarded as containing and bearing the impact of the others, and the relationship among them is not simply unilineal (Cox, 1981). Based on Cox's method of historical structures, Stephen Gill has generated a detailed interpretation of a historical bloc as follows,

> An historical bloc refers to an historical congruence between material forces, institutions and ideologies, or broadly, an alliance of different class forces politically

> organized around a set of hegemonic ideas that gave strategic direction and coherence to its constituent elements. Moreover, for a new historical bloc to emerge, its leaders must engage in 'conscious, planned struggle'. Any new historical bloc must have not only power within the civil society and economy, it also needs persuasive ideas, arguments and initiatives that build on, catalyze and develop its political networks and organization – not political parties such (Gill, 2003: 58).

The formulation of a new historical bloc is not an easy project, as Cox argued, 'only a war of position can, in the long run, bring about structural changes, and a war of position involves building up the socio-political base for change through the creation of new historical blocs' (Cox, 1983: 173-174). On the national level, Gramsci made a comparison between the war of maneuver and war of position regarding their role in countering the existing hegemon and establishing a new historical bloc, and he pointed out that 'the war of maneuver is the phase of open conflict between classes, where the outcome is decided by direct clashes between revolutionaries and the state. War of position, on the other hand, is the slow, hidden conflict, where forces seek to gain influence and power' (McHugh, 2013).

The war of position, in this paper, can be regarded as the movement towards the creation of a historical bloc. This movement has been divided by Gramsci (1989) into three levels. The first level is known as the *economico-corporative*, which denotes that the formulation of a particular group is based on specific interests; the second level is considered solidarity or class consciousness, which includes the whole social class but still purely focuses on economic issues; the third and top level is the hegemonic, which 'brings the interests of the leading class into harmony with those of subordinate classes and incorporates these other interests into an ideology expressed in universal terms' (Cox, 1983: 168).

In line with Gramsci's clarification above, hegemony can be seen as the highest level of a historical bloc. Hegemony, according to Gramsci's understanding and application, suggests 'a societal acceptance of a large range of norms and rules ranging from mode of production to organizations, systems, regimes and social order' (Li, 2016: 31). Furthermore, as Gramsci said, hegemony can be achieved through passage from the structure to the sphere of the complex superstructures, by which he means 'passing from the specific interests of a group or class to the building of institutions and elaboration of ideologies' (Cox, 1983). Thus, hegemony is attained by economic, political, and cultural leadership, leading to a broadly shared historical bloc. In other

words, a historical bloc, at this level, implies an alliance of a 'coalition of social forces' united under a common hegemonic project (Gramsci, 1971).

However, last but not least, the movement towards a new historical bloc or a new hegemon would face its counterforce – passive revolution – from the established powers. According to Gramsci, the notion of passive revolution has two components, Caesarism and *trasformismo*. Caesarism refers to when 'a strong man intervenes to resolve the stalemate between equal and opposed social forces' (Cox, 1983: 166), and *trasformismo* serves as 'a strategy of assimilating and domesticating potentially dangerous ideas by adjusting them to the policies of the dominant coalition and can thereby obstruct the formation of class-based organized opposition to establish social and political power' (Cox, 1983: 166-167).

**Conceptual Nexus: Global Governance, Hegemony and World Order**

The concept of global governance was proposed against the background of interdependence and globalization in the post-Cold War era. However, it should be noted that existing global governance can be traced back to the post-war capitalist international order in which the then international governance emerged and developed. In other words, it can be argued that the post-war Western-dominated international governance has laid the foundation for the contemporary architecture of global governance.

In this paper, it is supposed that the changing world order in the post-war era has been mainly shaped by and reflected in the architecture of international/global governance. This supposition is largely built on the conceptual nexus of the three concepts – global governance, hegemony, and the world order – which is expected to be clarified.

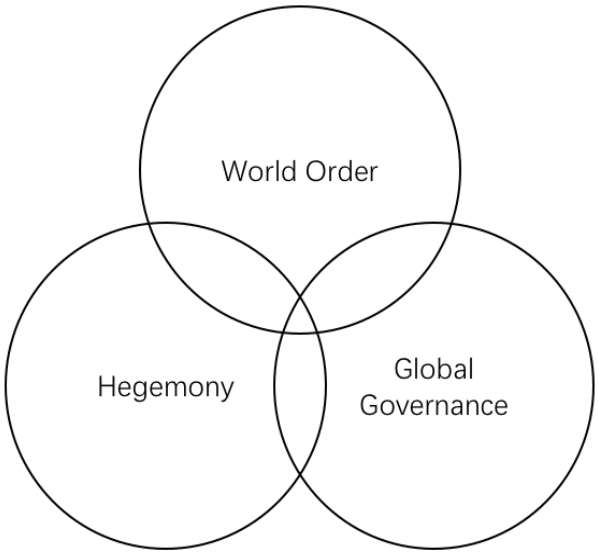


**Figure 1: The conceptual nexus among world order, hegemony and global governance**
Source: Author's own compilation

As a heatedly discussed academic topic over the last two decades, global governance has received exponentially increasing attention since the 1990s. Both the analytical unit and analytical level of global governance have broken the boundary of traditional international relations (IR) study. On the one hand, unlike in traditional IR, the state is not a single actor (analytical unit) in global governance any longer, intergovernmental organizations (IGOs), multinational corporations, non-governmental organizations (NGOs), and civil society are all beginning to play significant roles in influencing global issues and addressing global challenges; on the other hand, the rise of global governance can be regarded as a reflection towards and reconstruction of the traditional "levels of analysis" (individual – state – international system). This does not only imply that the state, as the centrality of global governance, is still considered as a core actor, but it also indicates that a higher level of global system (world order) and a lower level of domestic society (social force) should be taken into consideration and added as two complementary analytical levels in the study of global governance.

Since it covers such a wide range of actors and issue areas, as mentioned above, global governance still does not have a universal definition. However, it would not obstruct IR and international political economy scholars to make their contributions to the intellectual edifice in

which the nature of global governance is being continuously explored. This paper has collected some of the representative definitions of global governance which could contribute to our understanding of the conceptual nexus among global governance, hegemony, and world order.

Global governance, as Thomas G. Weiss argues, 'is the combination of informal and formal values, rules, norms, procedures, practices, policies, and organizations of various types that often provide a surprising and desirable degree of global order, stability and predictability' (Weiss, 2013: 32). Raimo Vayrynen identifies global governance as 'collective actions to establish international institutions and norms to cope with the causes and consequences of adverse supranational, transnational, or national problems'(Vayrynen, 1999: 25).

Margaret Karns and Karen Mingst proposed their viewpoint of *the pieces of global governance*, which can be divided into six categories: (1) IGOs and NGOs; (2) international rules and laws, which includes more than 3,600 multilateral agreements, apart from numerous legal practices and opinions; (3) international norms or 'soft law' in the areas of human rights and environmental protections; (4) international regimes, that is, principles, norms, rules and decision-making structures in specific issue areas; (5) ad hoc arrangements and groupings that do not have any legal basis, such as the G7/8 and G20, and global conferences or world summits; and (6) private governance, of which the most typical example is credit-rating agencies, such as Moody's Investors Service (Karns & Mingst, 2015).

In addition, according to Chan and Lee, 'global governance concerns the issue of how the world is governed; that is, how global problems are handled and how global order and stability can be ensured, in the absence of an overarching central authority or world government to regulate' (Chan & Lee, 2012: 5).

From these definitions and interpretations, it can be found that institutions and ideas are two critical elements constituting global governance. In the meantime, as mentioned above, institutions and ideas are also regarded to be two major components of Gramsci's understanding of hegemony (Gramsci, 1971). More important, the high relatedness between global governance and world order was emphasized by the above scholars in their definitions.

Furthermore, based on an understanding of global governance, one of the breakthrough

points to establish the conceptual relationship between global governance and hegemony is international organizations. According to Cox (1983), international organizations can be regarded as the mechanisms of hegemony,

> One mechanism through which the universal norms of world hegemony are expressed is the international organization. Indeed, international organization functions as the process through which the institutions of hegemony and its ideology are developed. Among the features of international organization which express its hegemonic role are the following: (1) the institutions embody the rules which facilitate the expansion of hegemonic world orders; (2) they are themselves the product of the hegemonic world order; (3) they ideologically legitimate the norms of the world order; (4) they co-opt the elites from peripheral countries; (5) they absorb counterhegemonic ideas (Cox, 1983: 172).

In Cox's illustration, international organizations are not merely material entities which 'possess physical locations (or seats), offices, personnel, equipment, and budgets' (Young, 1989: 32), they also contain norms, ideas, and rules of which their founding members are firmly in support. Moreover, the rules, ideas, and norms embedded in international organizations are closely associated with the issue of how international/global affairs should be dealt with and how the world should be governed. In this respect, it is not difficult to comprehend that whether international organization is effective or not as a mechanism of hegemony is largely connected to the rise and decline of global governance and the vicissitudes of world order.

Therefore, if a state or a group of states intends to become a hegemon or a historical bloc, the state or the group of states would have to establish and defend a world order which can be universal in conception, i.e., 'not an order in which one state directly exploits others but an order which most other states could find compatible with their interests' (Cox, 1983).

Last but not least, at the end of this section, it is necessary to point out three different but overlapping ways of understanding the world order, developed by Steen Fryba Christensen and Li Xing: world disorder, world new order, and world re-order.

World disorder indicates the confrontations and clashes between existing powers and emerging powers. Because of their disagreements and conflicts of interest, the international regimes and existing structures are inclined to be disrupted; world re-order implies that the existing

order displays an ability for resilience by responding to altering environments in which a historical evolution from unipolarity to multipolarity is proceeding. This order will undertake a *trasformismo* process (one kind of passive revolution) in which the existing structure is trying to accommodate the new rising powers, and the essential features of the existing order are expected to be maintained; world new order, as the name implies, suggests that the world is to be shaped by a new order in which the existing and emerging powers will negotiate on new relationship terms shaped by new norms, rules and ideas, leading to a redefined new world order (Christensen & Li, 2016).

**Analysis: Historical Dynamics between China and Global Governance**

The paper attempts to deliver a historical and holistic interpretation of China's changing role in the post-war world order since the establishment of the PRC. On the basis of the conceptual nexus built in the last section, these historical dynamics between China and the world order will be interpreted and analyzed through the lens of international/global governance. Moreover, by applying the method of historical structure developed by Cox, China's roles in international/global governance will be discussed through investigating the three interrelated and reciprocal elements: material capabilities, institutions, and ideations. The historical process is divided into three periods: the period of hostility and rejection (1949-1971), the period of acceptance and integration (1971-2008), and the period of leadership and contribution (2008 up to now). This division is mainly based on three significant historical events: the outbreak of the Cold War, Ping-pong diplomacy2, and the spread of the 2008 global financial crisis.

| Time phase / China and international/ global governance | The period of hostility and rejection (1949-1971) | The period of acceptance and integration (1971-2008) | The period of leadership and contribution (2008 up to now) |
|---|---|---|---|

[2] "Ping-pong diplomacy" (乒乓外交) refers to the exchange of table tennis (ping-pong) players between the United States and the PRC in the early 1970s. The event marked a thaw in Sino-American relations that paved the way for a visit to Beijing by President Richard Nixon.

| | | | |
|---|---|---|---|
| Strategic choice | Radical anti-hegemonic strategy by means of the war of maneuver | "Tao Guang Yang Hui", move with the passive revolution from hegemony | "You Suo Zuo Wei", Counter-hegemony through war of position |
| Material capabilities | China was a middle power between the two superpowers, the US and the USSR | China was a subordinated state under the US-dominated hegemony | China is the second largest economy in the world |
| Ideas | World Revolution, anti-imperialism, anti-revisionism | "Three World Theory", "Reform and Opening-up", accept and comply with Western ideas and norms | "Wide consultation, joint contribution and shared benefits", contribute new ideas |
| Institutions | Criticized and resisted Western-based international institutions | Active engagement and cooperation with Western-led institutions | Initiated new China-led institutions, such as the AIIB and the NDB |
| The direction of world order | World disorder | World re-order | Between world re-order and world new order |

**Table 1: Historical dynamics between China and international/global governance**
Source: Author's compilation

***The period of hostility and rejection (1949-1971)***

The outbreak of the Cold War in 1940s split the world into two historical blocs: the Western-dominant capitalist international system and the USSR socialist international system. Contemporary global governance can be traced back to the then Western-led international governance, which is also widely recognized as the "post-war international order". Post-war Western-based international governance is built upon three significant pillars. They are: the political pillar, the United Nations; the economic pillar, the Bretton Woods System; and the security pillar, the North Atlantic Treaty Organization.

In accordance with the changing international situation, this period can further be divided into two subphases, the subphase of "Leaning to One Side" (1949-1960) and the subphase of "Two Fronts" (1960-1971). In this period, generally speaking, China maintained an attitude of hostility and rejection towards and adopted an anti-hegemonic strategy against the then Western-dominated international governance, through the means of the war of maneuver.

In terms of material capabilities, after the Second World War, although China was struggling to transform itself from a backward agricultural country to an industrial country, it had vast land, a large population, and great economic and military potential, and its high political status as the second largest socialist country made China an indispensable power between the two superpowers. In this first subphase (1949-1960), the United States did not give up its recognition of the fugitive Chiang Kai-shek regime, refusing to recognize the legitimacy of the new Chinese government and obstructing China to replace the Kuomintang government in the United Nations and other international organizations. Thus, for its national security and ideology, the US was regarded as the main threat by China. In the second subphase (1960-1971), around the late 1950s and early 1960s, relations between China and the USSR began to deteriorate and finally relations changed from being allies into being enemies. In the meantime, the US' hostility towards China not only changed, but also intensified. The main idea of the Kennedy administration was that China was more "aggressive" than the Soviet Union and was more threatening. Thus, on the issue of China, the two superpowers formed somewhat of a consensus, and in some areas, they even dealt jointly with China.

With regard to ideas, Mao Zedong, the then Chinese president, proposed that China should assume a responsibility for world revolution on the international level. This corresponded to Mao's idea of persisting in the revolution on the domestic level, such as the "Three Great Remould"[3]

[3] The "Three Great Remould" (三大改造) refers to the socialist remould of the ownership of the means of production by the Chinese government from 1952 to 1956. This included the socialist remould of agriculture, the handicraft industry, and the capitalist industrial and commercial sectors. The purpose was to change the nature of production relations. At the end of 1956, the three major remoulds were basically completed, which signaled that China had entered the primary stage of

from 1952-1956. After the complete split between China and the Soviet Union in 1962 under the strategic guidance of the "Two Fronts", Mao Zedong made it clear that the struggle against imperialism and revisionism were China's primary task. He believed that, within 50 years to 100 years, it would be a great time for the complete transformation of the social system in the world (Zhou, 2009). In 1965, "People's Daily" put forward the slogan of "continued revolution". Under the guidance of the idea of supporting world revolution, China was not only a major supporter of the armed struggle led by revolutionary parties in Southeast Asian countries, including Myanmar, Indonesia, and Vietnam, etc.; it was also the major source of foreign aid to Third World countries. In 1973, the amount of China's foreign aid hit a historical high, accounting for 2.05 percent of its Gross National Product (GNP) for that year (Zhang, 2012). The theoretical and practical experience of China-promoted world revolution can be regarded as the war of maneuver adopted by China as a radical anti-hegemonic strategy.

With reference to institutions, since the founding of 'New China', due to its ideological opposition, China, for a long period, was excluded from the international governance system under the US' policy of isolation and blockade. Coupled with Taiwan's long-term occupation of a United Nations seat supported by the United States, China was isolated from almost all of the critical international organizations before its restoration of its legitimate UN seat. In addition, another reason for this isolation was China's adherence to the principles of independent foreign policy and non-interference, which made China fear interference from Western international organizations. In the meanwhile, in line with Mao Zedong's ideas of world revolution, China perceived Western-led international organizations – the main components of post-war international governance – as the political and economic tools of Western imperialism to interfere in the sovereignty and internal affairs of other countries. For example, China considered the United Nations as the US' voting machine.

In sum, in this period, it can be observed that the relationship between China and the Western-based international governance was mutual hostility and mutual rejection. China's foreign policy of "Leaning to one side" and "Two Fronts", its ideas of world revolution, and its strong

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socialism. The socialist system (economic aspect) was basically established in China.

critiques of Western-dominated international organizations together reflect China's anti-hegemonic view by means of the war of maneuver. Therefore, China's role in the then international governance can be considered to be that of a "system revisionist".

***The period of acceptance and integration (1971-2008)***

In the second period (1971-2008), China not only began to accept and recognize Western-based international/global governance, but it was also integrated into and benefitted a lot from this system. Like the last period, this period was also further divided into two subphases, one marked by the event of "Ping-pong diplomacy" in 1971; and the other signaled by the launch of China's "Reform and Opening-up Policy" in 1978.

With regard to material capabilities, in the first subphase (1971-1978), with the further deterioration of Sino-Soviet relations especially after the Sino-Soviet border armed conflict in 1969, Chinese leaders recognized that the Soviet Union posed a greater threat to China than the United States. Against this background, "Ping-pong diplomacy" contributed a lot to the lessened tensions between the US and China, opening the door for then US' President Nixon's visit to China in 1972 (Andrews, 2016). Nixon's visit promoted reconciliation between the US and China, and realized cooperation between the two states to jointly suppress the Soviet Union (Zhang, 1997). This reconciliation finally led to the establishment of Sino-US diplomatic relations in 1979, which changed the landscape of world power relations. The second subphase (1978-2008) witnessed the dramatic rise of China during those three decades, averaging 9-10 percent real growth per year. In this subphase, China lifted 400 million people out of poverty, which was claimed as "unprecedented in human history" by the World Bank. More significant, China has been the engine for East Asian and global economic growth (Li, 2010).

In terms of ideas, in the first subphase (1971-1978), the "Three World Theory" - proposed by Mao Zedong in 1974 - was built on his arguments of "One Intermediate Zone" (1954) and "Two Intermediate Zones" (1963). Mao contended that the division of three worlds was based on two indicators, one being national capacity and the other being ideology and social institutions. According to the "Three World Theory", two superpowers, the US and the USSR, belonged to the First World; the intermediate section, including Europe, Japan, Australia, and Canada, is the Second World; and Asia (except Japan), Africa, and Latin America belong to the Third World.

Under the guidance of the "Three World Theory", in order to achieve its target of opposing the hegemony of the USSR, China can change its policy towards the US from war and confrontation into dialogue and cooperation, and China can create foreign policy by crossing social, institutional, and cultural differences so as to establish a broad united front including the Second World and the Third World (Jiang, 2012). Compared to the radical strategy – world revolution – in the first period, the establishment of a broad united front can be considered as a relatively moderate and circuitous counterhegemonic strategy, coined the war of position.

In the second subphase, the main idea of China's grand strategy was the "Reform and Opening-up" which contributed tremendously to the rise of China. It contends that the proposition of "Reform and Opening-up" was based on two considerations of the then Chinese leadership. One was to realize domestic development and economic modernization, which could deal with the crisis of legitimacy faced by the second generation of leadership headed by Deng Xiaoping after Mao's (the first generation of leadership) economic and political chaos in his late years. The other was to improve China's international image and reputation (Johnston, 2001), especially after China's long isolation from the system of international governance. Moreover, at the beginning of the 1990s, Deng Xiaoping proposed another idea of "Tao Guang Yang Hui" (韬光养晦), implying that China should keep a low profile and be self-restrained. China would not seek hegemony or take the lead. Therefore, in this subphase, in line with the ideas of "Reform and Opening-up" and "Tao Guang Yang Hui", and because of its national interest and the pressure from international society, China was gradually accepting and complying with some of the ideas and norms embedded in the Western-led international order.

Regarding institutions, in the first subphase (1971-1978), with the transfer of the UN seat from Taiwan to the PRC in 1971, China began to establish or resume limited cooperation with certain international organizations. China established contacts with the subsidiary bodies of the United Nations and participated in its activities. For instance, in 1972, China participated in the official activities of the United Nations Development Program, the United Nations Environment Program, the United Nations Industrial Development Organization, and the United Nations Conference on Trade and Development, etc. In November 1973, the Chinese delegation attended the 17$^{th}$ session of the Food and Agriculture Organization's conference and was elected a member. At the same time, China also established contact with a number of regional organizations. For

example, in May 1975, the European Community issued a statement recognizing the People's Republic of China as the only legitimate government of China, and establishing a formal diplomatic relations with China through negotiations. In addition, China also resumed and developed relations with international organizations such as the Organization for the Prohibition of Nuclear Weapons in Latin America, the International Commission on Dams, the International Association of Geodesy and Geophysics, the International Organization for Standardization, the International Olympic Committee, the Asian Sports Federation, and the African Union of Trade Unions, etc. During this period, the number of international organizations China participated in increased from 1 in 1966 to 21 in 1977 (Wang & Tan, 2010).

In the second subphase, since the beginning of Reform and Opening-up, China expanded and deepened its relationship with more major Western-dominated international organizations, such as the World Bank, the IMF and GATT (the predecessor of World Trade Organization (WTO)). On 17th April 1980, the IMF officially restored China's representation. In April 1980, Deng Xiaoping met with Robert Strange McNamara, the then president of the World Bank, explaining China's Reform and Opening-Up Policy, and welcomed the World Bank's cooperation with China. On May 12th of the same year, China officially resumed its legal seat in the World Bank. China and the World Bank have conducted fruitful cooperation in three areas: project loans, economic research, and technical assistance. In November 1982, the GATT granted China the status of observer state, by which China participated in the Uruguay Round of negotiations. After more than 15 years of hard negotiations, China became a member of the WTO in 2001. This marks a new stage in the interaction between China and global economic governance, and it promotes the Chinese economy to share more convergence with the international/global economic system through institutional cooperation.

Above all, in this period, the economic factors and international image were two important considerations for China's participation in international/global governance. Thus, it can be observed that, under Deng Xiaoping's strategic guidance of "Tao Guang Yang Hui" (韬光养晦), China was moving away from passive revolution to the Western-led international system. China not only accepted and complied with Western-based ideas and institutions, but it also benefitted a lot from its integration in this system. One outstanding fact should be noted that, in 2005, Zoellick proposed that the United States step up efforts to make China a "responsible stakeholder" in the

international system (Xinhua, 2009). Throughout this period, China's role in international/global governance was changing from the "system revisionist" to "system vindicator".

***The period of leadership and contribution (2008 up to now)***

The beginning of the third period (2008 up to now) was marked by the event of the 2008 global financial crisis. In this period, China started to play a more proactive role in global governance, and showed its willingness to join and shape the architecture of global governance. The focus of China's foreign policy is not confined to the calculations of pure economic gain and loss, but it is also expanding to the socio-political and superstructural domains. By so doing, China intends to obtain more structural power - which refers to "the power to choose and to shape the structures of the global political economy within which other states, their political institutions, their economic enterprises, and (not least) their professional people have to operate" (Strange, 1987: 565).

With regard to material capabilities, the 2008 global financial crisis led to a revolutionary global power redistribution, with the dramatic rise of the emerging powers and the relative decline of the established powers. Among the emerging powers, China, as a developing country, has had a number of achievements. China became the world's biggest energy user in 2009, it replaced the United States as the largest manufacturing power in 2010, and it became the world's largest trading nation in 2013, etc. Moreover, it can be said that China has gained more technological and organizational capabilities than ever before. For instance, in the latest round of reform of the IMF and the World Bank, China's voting share increased 3.143% and 1.64%, which was the highest compared to other countries. After this reform, China became the third most powerful member in both of the two existing international organizations. In addition, the Chinese Yuan was added to the IMF's SDR basket in 2015, with the Yuan having a 10.9% weighting in the basket, which is just below that of the US dollar's 41.73% and the Euro's 30.93%.

In terms of ideas, since China's new leadership headed by Xi Jinping in 2012, China has, for the first time, put forward its overall idea of global governance, the principle of "wide consultation, joint contribution and shared benefits". To be more specific, wide consultation refers to the brainstorming and discussion by all participants in global governance; joint contribution indicates all participants do their best to play to their respective advantages and potential to promote the construction of global governance; shared benefits means that the consequences of global

governance are more equitable to all participants (Xinhua, 2015). Moreover, China proposed a number of innovative ideas regarding different issue areas of global governance. For instance, the Belt and Road Initiative was proposed by China in order to promote regional development and integration in Asia; the proposal of the New Asian Security Concept indicates that China has great willingness to take solid steps to strengthen security dialogue and cooperation with other parties, and jointly explore the formulation of a code of conduct for regional security; by promoting the idea of the "Community of Common Destiny", China is striving for developing a shared regional vision and trying to persuade other countries that their own peace and prosperity will best be secured by being more intertwined with that of China; and China's proposition of the "New Type of Major Power Relations" can be considered as a strong response to the argument of "Thucydides' Trap" in the era of globalization and interdependence.

With reference to institutions, although China's status in existing global governance has been relatively strengthened since the global financial crisis, its rights for speaking and making decisions are still not matched with its material capacities and its contributions to world development. As a result, China has begun to move from joining Western-dominated international organizations to struggling for more structural power through initiating several new international organizations. This transition can be regarded as a milestone of China's dynamic role in global governance. One point should be noted: the China-led AIIB is the first multilateral development bank initiated by a developing country, which shows China's determination to be a leader and rule-maker in global governance. In addition, the New Development Bank was established by the BRICS in 2014, which was considered as a great achievement of this China-led trans-regional cooperative mechanism. Last but not least, China's leaders have claimed several times, on different occasions, that China-led international institutions will play a complementary role in the existing global governance.

In sum, in this period, it can be found that China is adopting a counter-hegemony strategy through its war of position which is a slow, hidden conflict where forces seek to gain influence and power. This can be seen to be manifested in China's great willingness to lead and shape the development of global governance by contributing a number of new ideas, institutions, and regional/global public goods. By so doing, China is starting to play a more proactive role in the making of a new historical bloc (an emerging global governance structure) co-shaped by the

established and emerging powers compared to the old historical bloc (the Western-dominated global governance structure). China's role in global governance is experiencing a transition from a "system vindicator" to that of a "system reshaper".

**Conclusion: A New World Order in the Making?**

This paper has provided a historical and holistic interpretation of the historical dynamics between China and the world order over the past six and half decades through the lens of international/global governance. According to neo-Gramscian IR theory, it attempts to place the relationship between China and the world order within a dynamic movement rather than a static analytical framework in a certain historical background, as realism and liberalism would suggest. This approach can lead to a more holistic understanding of China's dynamic role in global governance/world order from past to present.

In each historical period, inspired by the neo-Gramscian school, the paper argued that the dynamic interactions between material capabilities, ideas, and institutions constructed the causes and consequences of China's strategic choices in international/global governance. Moreover, the three historical periods are not separated from each other, which means that the consequence of one period would be the cause for the other. In other words, China's strategic choice and its role in global governance today have deep roots in past periods.

After a long isolation from the then international governance during the first period, we suggest that China could not achieve its desired economic development (the failure of the Great Leap Forward4) and international status (China's passive position caused by the "Two Fronts" policy) by choosing the radical anti-hegemony strategy by means of the war of maneuver which shaped China as a "system revisionist". It forced China to reexamine its foreign policy and accept the passive revolution from the United States (Nixon's visit to China) under the guiding principle of "Tao Guang Yang Hui". From there, China launched its "Reform and Opening-up Policy", by

[4] The "Great Leap Forward" (大跃进) of the PRC was an economic and social campaign by the Communist Party of China from 1958 to 1962. The campaign was led by Chairman Mao Zedong and aimed to rapidly transform the country from an agrarian economy into a socialist society through rapid industrialization and collectivization. However, it is widely considered to have caused the Great Chinese Famine.

which China was not only recognized by an increasing number of countries politically, but it also has, economically, benefitted a lot from its integration into Western-based international/global governance. Against that background, it can be said that China has successfully transformed itself from a "system revisionist" to a "system vindicator". Since the 2008 global financial crisis, given that the defects of Western-led global governance are becoming more obvious, with the revolutionary change of the pattern of global power, China has started to adopt a counter-hegemony strategy through the war of position guided by the principle of "You Suo Zuo Wei". As a popular phase from Spiderman goes, "with great power comes great responsibility". In these circumstances, China has proposed a number of innovative ideas and a few emerging international institutions which aim at reforming/reshaping the architecture of global governance. Thus, it can be considered that China is moving from a "system vindicator" to "system reshaper".

From the above historical process, one critical point should be noted: as China has been closely associated with the existing international system over the last four decades, it also suggests that although China has become the second largest economy in the world and has incredible material capabilities, it has no reason or intention to thoroughly overthrow the existing world order, which is not accordance with China's national interest. As Chinese President Xi Jinping argues, "China is a participant, builder and contributor to the current international system … we want to continue to be the participant, facilitator, and leader of the global governance change process" (Xinhua, 2016).

Last but not least, by placing the rising China and its "You Suo Zuo Wei" strategy within the context of the "Three World Order" (world disorder, world re-order, and world new order) developed by Christensen and Li (2016), this paper has produced the following arguments, (1) as the largest emerging power, China is undoubtedly involved with and is even play a leading role in the making of a new world order; (2) this new world order must not be a "world disorder", which indicates the confrontations and clashes between existing powers and emerging powers, since this situation is not in the interest of any country in the era of interdependence and globalization; and (3) the new world order in the making may be seen as in-between the "world re-order" and "world new order"; the former implies that "the existing order is trying to accommodate the new rising powers, and the essential features of the existing order are expected to be maintained" (2016: 5), and the latter suggests "the existing and emerging powers will negotiate on new terms of

relationship shaped by new norms, rules and ideas, leading to redefined new world order" (Christensen & Li, 2016: 4).

The argument "world re-order" is kind of conservative, underestimating the possibility and capabilities of China in shaping the rules of game; on the contrary, the argument of a "world new order" is sort of radical, overestimating China's intention and capacity to change the world order. Therefore, based on these understandings, it is reasonable to conclude that China is currently serving as a proactive rule-shaper rather than a disruptive revisionist or a stubborn vindicator of the existing world order. However, it is necessary to mention that China's role of rule-shaper is still in its early stages, as past experience shows. It still needs to be tested by a long historical process. How the relationship between China and the world order will develop in the long run still depends on a number of predictable and unpredictable factors.

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# Consideration on China's New Normal Economic Growth

*Dic Lo*[1]

**Abstract:** Slowdown in economic growth is the defining characteristic of the 'New Normal' of the Chinese economy post-2008. Explanations of the slowdown have coalesced around the theses of demand deficiency and profitability decline. This paper dissects the theoretical reasoning and empirical backings of these theses, with a view to clarifying the structural-institutional conditions that underpin the economic performance. On that basis, the paper arrives at the judgement that, long term, whether or not China is able to sustain medium-speed growth or even to resume high-speed growth hinges on the rivalry between two models of economic transformation that have both been operating in the economy in recent years: namely, a production-oriented model versus a speculation-oriented model.

**Keywords:** New Normal, production-oriented model, speculation-oriented model, growth

## Introduction

Slowdown in economic growth is the defining characteristic of the 'New Normal' of the Chinese economy post-2008, amid the Great Recession that has engulfed the world as a whole. Initially, in the years 2008-2011, thanks to the government's massive fiscal stimuli, Chinese economic growth continued to maintain a fast pace that is close to 10% a year. The growth rate then dropped to below 8% levels in the years 2012-2014, and below 7% levels thereafter. As of mid-2017, there is little evidence that the growth slowdown would be reversed in the foreseeable future (China's National Bureau of Statistics, 2017).[2]

Is the growth slowdown cyclical in nature? Or is it a long-term trend? The term New Normal, which has been formally used by the Chinese state leadership, suggests that the slowdown is more likely long-term than short-term. Or at least that is the view of the leadership, not least in its openly stated vision that an 'L-shape' curve is almost definite for characterizing the transition from the high-speed growth phase of the past three decades to a new phase of medium-speed growth from

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[2] Unless otherwise indicated, all statistical data in this paper are from the data bank of China's National Bureau of Statistics (NBS) (http://data.stats.gov.cn/easyquery.htm?cn=C01) and issues of its publication, the *China Statistical Yearbook* (http://www.stats.gov.cn/tjsj/ndsj/).

now on (Neteast News, 2017; Xinhua news, 2016).[3] State economic policy and development strategy have thus been designed on the basis of this vision.

Insomuch as the growth slowdown is indeed a long-term trend, there arises the question of what the structural-institutional conditions that have accounted for the transition are. Answers vary, mostly coalescing around two theses: namely, demand deficiency and profitability decline. These answers are with different degrees of scholarly substantiation and empirical backing, and hence have yet to yield a consensus. The Chinese state leadership, for its part, has been eclectic in the face of the different answers and has designed policy measures to address the relevant concerns raised by these answers.

This paper is intended to clarify the reasoning of the alternative answers, and to put them in comparison, with a view to constructing an appropriate synthesis. Given that the alternative answers do have elements of empirical truth, the paper further seeks to address the question as to what structural-institutional conditions would be necessary for maintaining medium-speed growth – or even returning to high-speed growth. Foreshadowing, it will be argued that, for coping with the problems of demand deficiency and profitability decline, government policy needs to be designed in a way that consolidates a production-oriented model instead of yielding to the pressure of a speculation-oriented model. This amounts to reshaping the Chinese 'model' of economic transformation, in a world of speculation-prone financial expansion.

**The Stagnation of Investment Growth and Demand-side Constraints**

Discernibly, in the New Normal, the immediate cause of the slowdown in economic growth is the precipitation of the growth in productive investment. Economic growth at an average annual rate of around 10% in the period 1980-2011 was accompanied by investment growth of 22% in nominal

[3] *Renmin Ribao* (The *People's Daily*), the mouthpiece of the Communist Party of China, carried an interview with a so-called 'authoritative person on the economy' on 9th May 2016, in which that person used the metaphor of the 'L-shape' curve to characterize the long-term outlook of Chinese economic growth; see http://news.163.com/17/0310/10/CF5MQBHL000187VE.html. The official Xinhua news agency also released that interview on the same day; see http://news.xinhuanet.com/2016-05/09/c_1118833995.htm.

terms. In the next five years from 2012, investment growth slows down to an average of 15% per annum. In real terms, the average annual rate of investment growth is 17% and 15%, respectively, for the two periods. Also in real terms, investment growth slows down to 12% in 2015, 9% in 2016, and 4% in the first half of 2017.

This close relationship between economic growth and investment growth is indicated in Figure 1, which shows the trend of the two variables in five-years moving averages. The ups and downs of the two trends follow almost the same pattern throughout the reform era, only the fluctuations in investment growth are far more severe than those of economic growth. These repeated fluctuations suggest that the growth slowdown post-2008 does embody some cyclical components, albeit, this time round, the slowdown seems far more protracted than the previous rounds. Still, it is clear that a long-term relationship between economic growth and investment growth exists.

Viewed more closely, post-2008 and especially after 2011, the slowdown in investment growth has been mainly accounted for by non-state investment, which typically accounted for 60%-plus of the total volume of investment in recent years. Figure 2 shows that non-state investment registered an abrupt decrease in growth rate in 2008, from the levels of more than 30% in the previous years, down to 20%. It then rebounded in the next three years, thanks to state encouragements including the inducement by the massive expansion in state investment. Continuous decreases then set in from 2012 onward, dropping down to the rate of 4% in 2016 and further down to 2% in the first half of 2017.

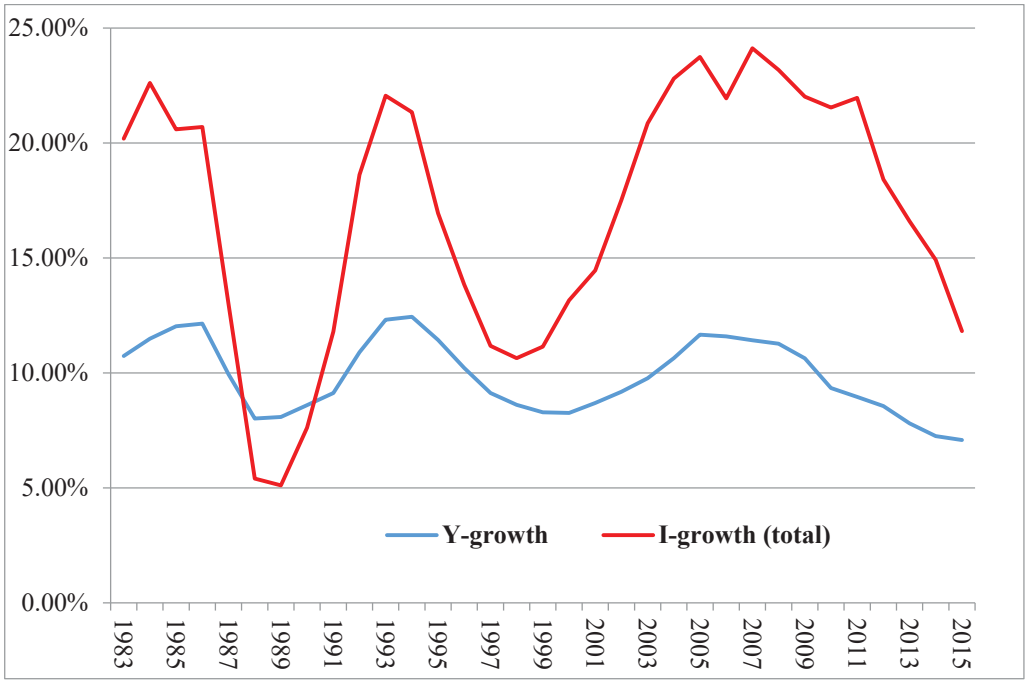


**Figure 1. Real annual growth rates of GDP (Y) and investment (I), five-year moving averages (%)**

Sources: Chinese National Bureau of Statistics, China Statistical Yearbook 2016, and China Statistical Yearbook 2017.

Notes: Investment refers to total fixed-asset investment. Its growth rates are computed by using the investment price index as a deflator.

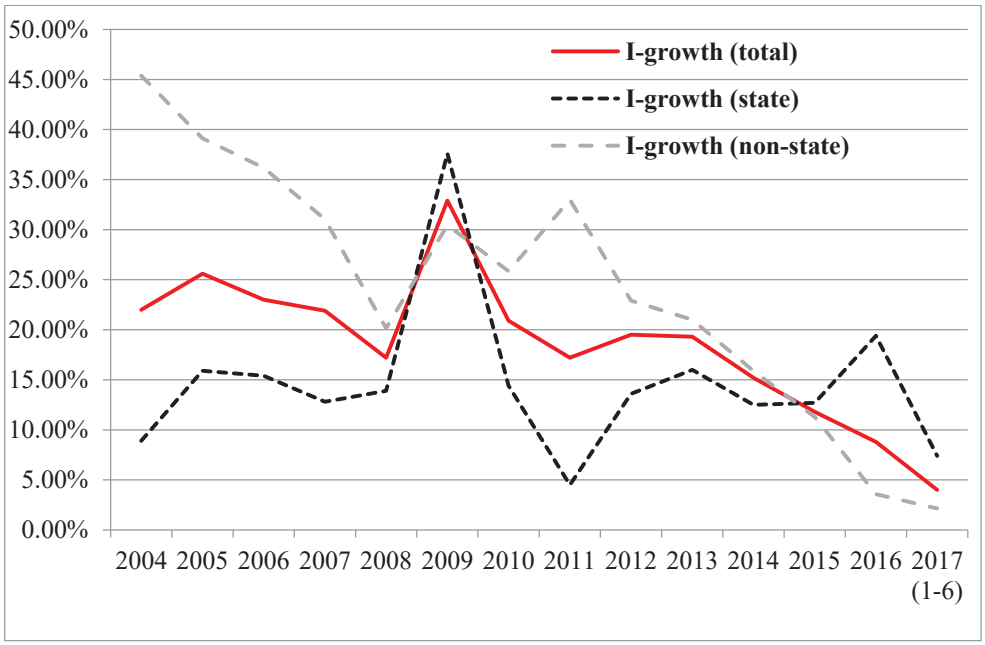


**Figure 2. Real annual growth rates of state investment and non-state investment (%)**

Sources: Chinese National Bureau of Statistics, China Statistical Yearbook 2016, China Statistical Yearbook 2017, and NBS data bank.
Notes: Investment refers to total fixed-asset investment. Its growth rates are computed by using the investment price index as deflator.

Conceptually, it is conceivable that abrupt decreases in the rate of investment growth could undermine economic growth in two ways. First, because investment is a component of aggregate expenditures, it could impose a demand-side constraint on economic growth in the current period. Second, because investment is normally the main underpinning of the expansion in productive capacity and the improvement in productivity, it could constrain long-term economic growth. In this connection, it is also worth noting that the predominance of non-state investment in the total implies that the Chinese economy as a whole is nowadays dominated by market-based, profit-oriented decisions – at least when the state does not reign in to counter-balance this predominance. No wonder, therefore, in the context of the Great Recession worldwide, the growth slowdown in China this time round has been more protracted than the previous rounds.

Explanations of the slowdown in investment growth, and thereby in economic growth, have coalesced around the theses of demand deficiency and profitability decline. And both demand deficiency and profitability decline are said to be long-term rather than short-term phenomena. Hence, they must be deeply rooted in certain structural-institutional conditions that are intrinsic to the prevailing model of economic transformation.

For the thesis of demand deficiency, the reasoning is straightforward and the empirical evidence seems obvious. Research and journalistic reports abound about the excess capacity, and excessive exports that have caused trade frictions with other countries, of such sectors as steel, cement, and coal, especially after 2011. Most important, the stagnation of the sector of real estate and land development – after the unprecedented booms in 2007-2013 and despite the sporadic resurgences thereafter – is evidently the main cause of demand deficiency in many other sectors. Alongside the excess capacity are phenomena of sluggish sales and factory closures. As a result, the outcome of investment turns into the piling up of inventories, particularly in the form of the famous phenomenon of ‘ghost towns’, i.e., blocks of unoccupied or semi-completed residential properties. This undermines investment, including state investment that is typically much less sensitive (than non-state investment) to demand conditions.

It should be noted that demand deficiency is not tantamount to a lack of social needs. After all, in China today, there still exists ample space for the progress in urbanization and with it rural-to-urban migration. A huge number of peasant households are in need of joining the urban population, and of getting urban residential properties. It is simply because of their lack of purchasing power, or, because of urban residential properties being exceedingly expensive, that these needs can not be satisfied. The deviation between market demands and social needs indicates, once again, the predominance of profit orientation in the Chinese economy today.

The phenomena of excess capacity, together with their perceived causes, gives rise to a general thesis on demand deficiency under the New Normal: namely, the thesis of imbalances in the composition of aggregate demands. It is argued that Chinese economic growth has relied excessively on investment and export, with consumption growth lagging far behind. It is further argued that such growth path is unsustainable, both because the Great Recession worldwide tends to undermine China's export growth, and because investment growth only adds to productive capacity and therefore excess capacity over time. Finally, the argument that 'under-consumption' has been mainly caused by worsening income distribution, in the form of decreasing labor's share in national income, casts critical light on the prevailing model of economic transformation (Akyüz, 2012; Palley, 2006; Zhu and Kotz, 2011; Lo, 2013).[4] In any event, the fact that the Chinese state leadership has been attempting to 'rebalance' the economy by promoting the substitution of consumption for investment and export suggests that it takes the thesis of demand imbalances seriously.

**The Multiple Causes of the Decline in Aggregate Profitability**

Profitability decline refers to the continuous decrease in the aggregate rate of profit for the economy as a whole. Conceptually, in a market economy, investment is profit-oriented and hence profitability decline is bound to have a negative impact on investment growth. In the case of China under the New Normal, where non-state investment accounts for a major part of total investment,

[4] For references on the causes and implications of demand deficiency and imbalances of the Chinese economy, see Akyüz (2012), Palley (2006), Zhu and Kotz (2011). Lo (2013) provides a theoretical and empirical critique of this thesis.

and both have registered slowdown in growth, it is conceivable that the growth slowdown might have been caused by profitability decline.

The reality is more complex. Direct empirical evidence of profitability decline in the Chinese economy has been scattered, not least because there does not exist an official estimate of the aggregate profit rate. What does exist are series of profit data of the industrial sector alone. Figure 3 shows the annual rates of growth of both pre-tax and post-tax industrial profits. It is clear that both series registered very substantial decreases from high levels pre-2008 to low levels thereafter. By 2014, the growth of pre-tax profits turned to almost zero, whilst that of post-tax turned to negative. Nevertheless, in terms of the movements in the industrial profit rate (i.e., the ratio of profits to total capital), the picture is different. As can be seen from Figure 4, there is indeed a trend of declines in the pre-tax industrial profit rate both for state-owned enterprises (SOEs) and non-state-owned enterprises, but the levels of the profit rates remain rather high compared with those of the previous three decades. This said, however, the movements in the industrial profit rate might not necessarily represent those of the aggregate profit rate for the economy as a whole. Indeed, in the relevant scholarly literature, existing studies mostly come out with estimates indicating that the aggregate rate of profit has tended to fall since the early 2000s and this decline has accelerated post-2008 (Gaulard, 2013; Li, 2016; Xie and Li, 2016).[5] This being the case, something must have happened to account for this divergence between the industrial and aggregate profit rates. One possibility is the allocation of an increasingly bigger share of total capital to other sectors that are less profitable than industry, thereby pulling down the aggregate profit rate. This possibility is consistent with one of the three main explanations of the possible profitability decline in the Chinese economy: namely, the theory of rents squeezing profits, in addition to the theory of wages squeezing profits, and that of the rise in capital-to-output ratio undermining profitability.

[5] For scholarly works on estimating and interpreting the movements of the aggregate rate of profits in the Chinese economy, see Gaulard (2013), Li (2016), and Xie and Li (2016). These works all come out with the finding of profitability decline.

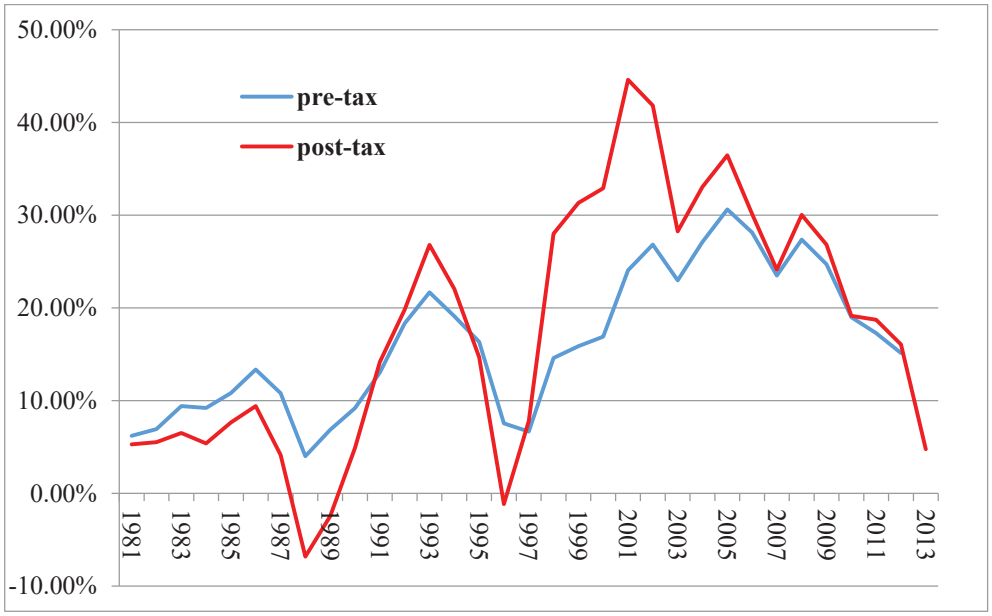


**Figure 3. Nominal annual growth rates of pre-tax and post-tax profits of industry, five-year moving averages (%)**

Sources: Chinese National Bureau of Statistics, China Statistical Yearbook 2016, and NBS data bank.

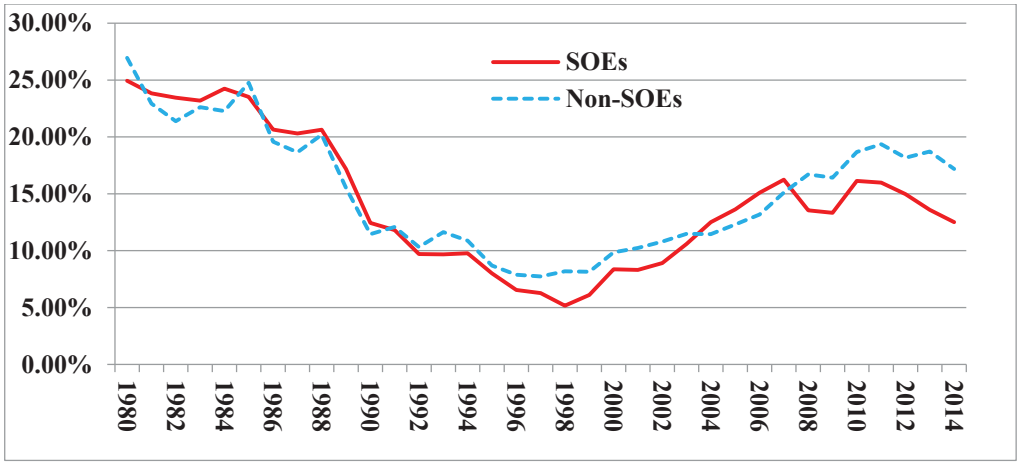


**Figure 4. Pre-tax profit rates of industrial enterprises (%)**

Sources: Chinese National Bureau of Statistics, China Statistical Yearbook and China Industrial Economics Statistical Yearbook, various issues, and NBS data bank.

Notes: Pre-tax profit rate = (total taxes + total profits) / (working capital + net value of fixed assets). Non-SOEs in this figure refer to non-SOEs in the formal sector of Chinese industry.

These three explanations warrant a close dissection, and the logical flows in Figure 5 can help to illustrate this.

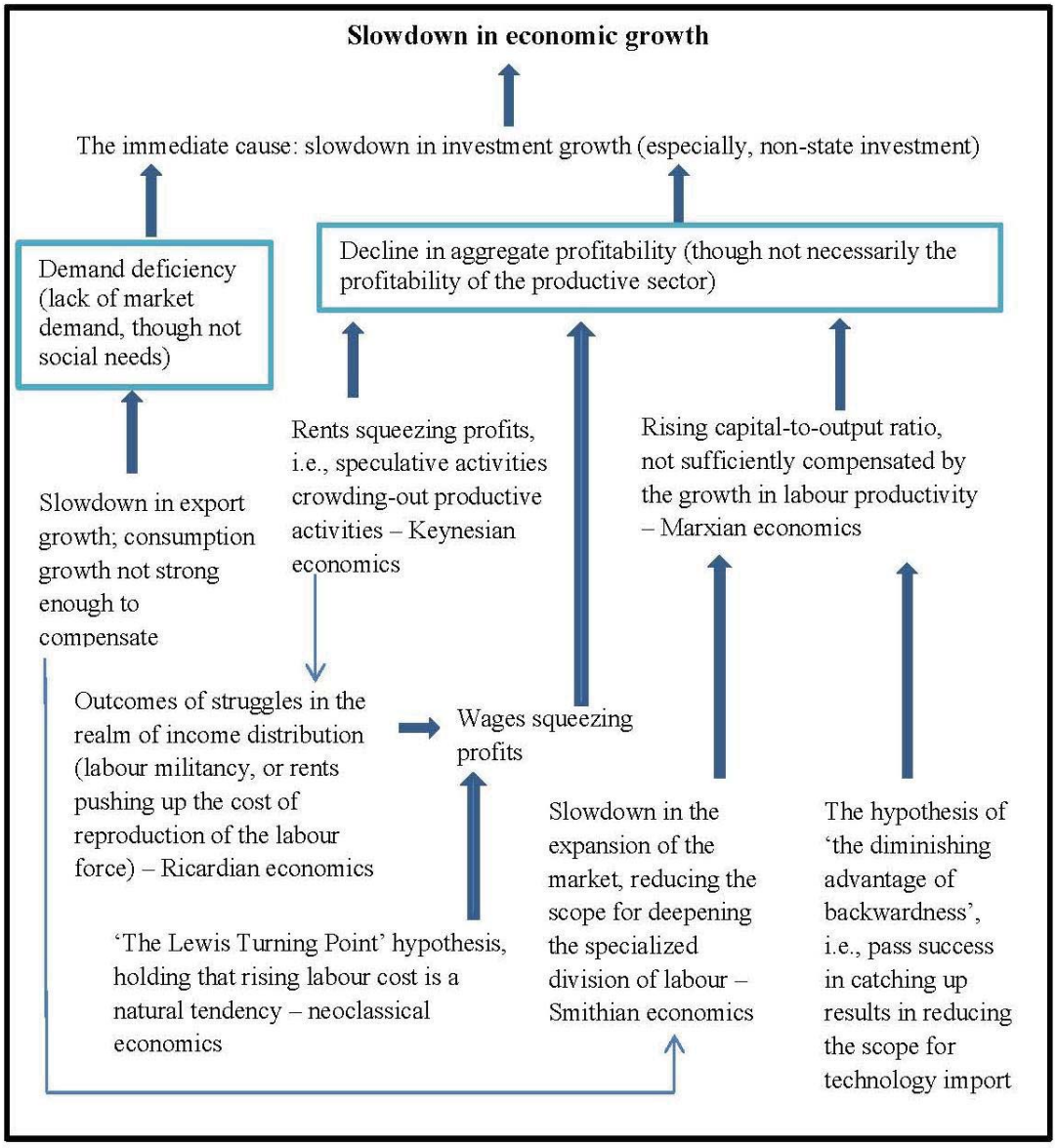


**Figure 5. Alternative explanations of the slowdown of Chinese economic growth under the New Normal**

The theory of rents squeezing profits refers to the expansion of non-productive, even counter-productive activities, which tend to crowd out productive activities. In line with Keynesian economics, such expansion typically arises from financialization of the economy – that is, unfettered financial liberalization leading to the predominance of speculative financial capital in the economy as a whole. In the case of the Chinese economy under the New Normal, financialization takes the form of the massive expansion and then the booms and busts of the real

estate sector, and of the stock market. This process involves the participation of productive enterprises in speculative activities, the inward and outward flows of international 'hot money', and the phenomenon of capital flights. This process entails the breakdown of the separation of commercial banks from the securities markets, and the increase of loopholes in the controls over cross-border capital flows – the undermining of the two lines of defense in the Chinese financial system against financialization. Ultimately, therefore, financialization has been in a significant measure caused by some particular policy orientation of the state.

The theory of wages squeezing profits appears to be more popular in the existing journalistic, as well as scholarly, literature. The empirical backing is quite obvious: that 'cheap labor' is no longer available in China. As will be seen in the next section, since the turn of the century, the growth in the real wage rate has persistently and substantially outpaced that of per-capita income, resulting in the increases of the share of labor compensation in national income. Three different theses have been supplied to explain this development:

- First, the thesis of the 'Lewis Turning Point' contends that China has reached the point of exhaustion of labor reserve, thus inevitably leading to wage rise. This thesis is based on the famous Lewis Model of labor transfer from the 'traditional' sector to the 'modern' sector. It assumes the neoclassical theory of the 'iron law' of wage determination, meaning that, in a market environment, income distribution is purely technically determined. It also implies that wage growth cannot exceed the limit imposed by the 'iron law', as otherwise economic growth will not be sustained (Garnaut *et al.*, 2014; Lu and Cai, 2014; Song and Zhang, 2010).[6]
- Second, the thesis of 'wages squeezing profits' contends that profitability decline has been mainly caused by labor militancy (or at least the increase in the social-political protection of labor rights). This thesis is in line with Neo-Ricardian economics, where social factors are deemed more crucial than technical factors in the determination of income distribution. In this connection, whilst neoliberal economists accuse wage rise of

[6] Garnaut *et al.* (2014), Lu and Cai (2014), and Song and Zhang (2010) are representative of the view that the Chinese economy has reached the Lewis Turning Point, and that deepening (market-oriented) reforms are necessary for China to avoid the so-called 'middle-income development trap'.

being detrimental to profitability and therefore economic growth, Neo-Ricardian economists rather argue for the opposite: that wage rise has fostered consumption growth, and thereby has been conducive to economic growth under the New Normal (Piovani, 2014; Qi, 2017; Hart-Landsberg and Burkett, 2011; Panitch and Gindin, 2012).[7]

- Third, the thesis of 'wage rise being no more than a delusion' contends that wage growth under the New Normal has in fact lagged behind the rise in the cost of living, and this is because the official data of the consumer price index have systematically understated the rise in the cost of living. Moreover, the argument goes, the rise in the real cost of living has been driven by the prices and rents of urban real estate, which are the product of speculative financial activities. This thesis thus falls back on the Keynesian theory of rents squeezing profits.

The theory of the rise in capital-to-output ratio undermining profitability has been developed mainly by Marxist economists, although it could also be interpreted according to neoclassical economics. The neoclassical interpretation is straightforward: that sooner or later, along with economic development, the law of diminishing marginal productivity of capital would set in, and this is probably the case in China under the New Normal. The Marxist interpretation, known as the 'law of the tendency of the rate of profit to fall', is more nuanced and multifaceted (Lo, 2013; 2016).[8] This 'law' starts with the postulate that, along with economic development, in the production process, the ratio of the means of production, or constant capital (c), to labor power, or variable capital (v), would tend to rise. And because, at the systematic level, it is only labor power that creates surplus value (s), the result is that the rate of profit ($r = s/[c+v] = [s/v]/[\{c/v\}+1]$) would then tend to fall. Note that, conceptually, this tendency could be offset by various counter-

[7] For references on labor extraction and profitability decline in China, see the analyses by Piovani (2014) and Qi (2017). Hart-Landsberg and Burkett (2011) and Panitch and Gidin (2012) focus on the broader implications of labor extraction for Chinese economic development.

[8] Informed by the studies cited in the next footnote, Lo (2016) provides a detailed analysis of the convergence of the Chinese economy to the Golden Age Model since the turn of the century, and the disruptions caused by the process of financialization under the New Normal. See also Lo (2013) on the broader context of the convergence, refuting the popular theses that Chinese economic development has been based on 'cheap labor', and, as such, it has been suffering from problems of underconsumption and export-dependence.

tendencies that raise the nominator of the profit rate, i.e., the rate of surplus value (s/v). It is worthwhile to see if counter-tendencies do exist in the Chinese reality.

- One possible counter-tendency is the increase in labor extraction, or work intensity relative to the wage rate. This is unlikely in China under the New Normal. As mentioned, the reality has rather been the tendency of rising wage rates and the share of labor compensation in national income. If anything, therefore, there exists stern resistance to the increase in labor extraction, and this resistance is consistent with the trend of profitability decline.
- Another possibility is the slowdown in productivity growth due to demand deficiency, or, more precisely, due to slowdown in the expansion of the market and therefore the scope for deepening the specialized division of labor. This possibility is consistent with the theories of both Adam Smith and Karl Marx, although the latter tends to put more emphasis on market expansion due to international trade. The reality is that China has been facing demand deficiency domestically and the Great Recession in the world economy.
- Yet another possibility is the slowdown in the pace of technological progress. In the case of China, this in large measure is associated with the diminishing potential of the 'advantage of backwardness', i.e., decreases in the scope for technology imports. Put another way, because of its past success in catching-up, China today is much closer to the world frontier of technology than it was previously – hence the increasing difficulties for technological progress based on importing. A fundamental reshaping of its structural-institutional conditions is thus needed for technological progress based on more indigenous innovations.

On the whole, the preceding review suggests that the cause of the slowdown of Chinese economic growth is complex. Focusing on investment stagnation, it is found that there exists a multitude of interpretations, each of which have sound theoretical reasoning. And all of them seem to have some elements of empirical truth, or at least are consistent with some empirical stylized facts. Without judging which interpretation contains more truth than the others, the next section will be devoted to analyzing what direction will be needed for Chinese economic transformation

in order to overcome the major hurdles to sustained economic growth as suggested by the various interpretations.

**Reshaping the Model of Economic Transformation**

From the turn of the century until the initial years of the New Normal, the prevailing structural-institutional conditions of the Chinese economic transformation managed to achieve outstanding developmental outcomes. There were simultaneously the following achievements, all on unprecedented scales: rapid rises in both productivity and the wage rate, and rapid expansion in both investment and consumption. These achievements provided the material conditions for broader social development, including the enhancement of the market power of labor, the rebuilding of a publicly-funded healthcare system that covers almost the entire Chinese population, and the acceleration of the process of urbanization.

Table 1 shows the real growth of the gross domestic product (GDP) per worker, as a proxy for the growth in labor productivity, in various periods over the reform era. In the period 1978-2000, an average growth rate of 7.66% per annum was recorded. In the subsequent period of 2000-2012, the rate increased to reach the level of 9.67% per annum. This acceleration of the rate of growth in labor productivity from the first period to the second period is, at any rate, spectacular. Yet, the slowdown of growth subsequently in the years 2012-2016 to an average annual rate of 6.84% also appears to be eye-catching.

| | (a)<br>Real GDP | (b)<br>Employment | (a)-(b) |
|---|---|---|---|
| 1978-2000 | 9.68 | 2.02 | 7.66 |
| 2000-2012 | 10.19 | 0.52 | 9.67 |
| 2012-2016 | 7.13 | 0.29 | 6.84 |

**Table 1. Average annual growth rate (%) of real GDP and employment**

Sources: Chinese National Bureau of Statistics, China Statistical Yearbook 2016, and China Statistical Yearbook 2017.

The movements in the wage rate are equally worth noting. Figure 6 charts out the trends of the growth in per-capita real GDP, the urban real wage rate, and the real wage rate of migrant

workers from 1990 to 2016. It can be seen that per-capita GDP growth is basically on a par with urban wage growth, whilst the wage growth of migrant workers lags seriously behind – the average annual growth rate of the three indicators being 8.99%, 9.45%, and 7.10%, respectively, for the period of 1990-2016. Viewed more closely, it is clear that there is a reversal of the comparison between the growth of the two wage rates and per-capita GDP. In the period 1990-2000, the average annual growth rate of the three indicators was 9.27%, 7.44%, and 3.11%, respectively. In the next period of 2000-2012, the three indicators became 9.57%, 11.85%, and 10.49%, respectively. This comparison that is in favor of wage growth persists into the years of economic slowdown. In the period 2012-2016, the three indicators were 6.57%, 7.42%, and 7.21%. They all exhibited a substantial slowdown in growth, though.

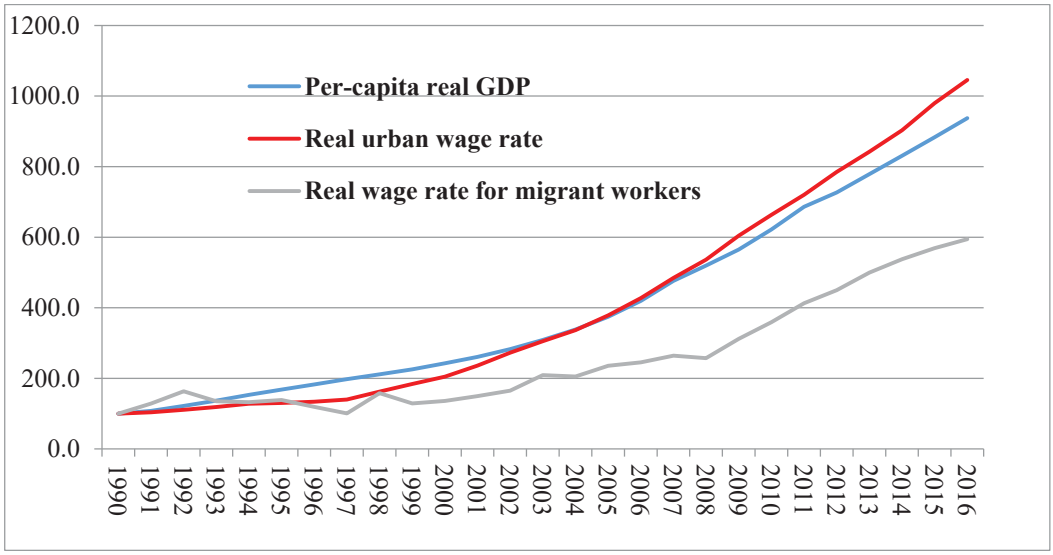


**Figure 6. Indices of per-capital real GDP, real urban wage rate, and real wage rate for migrant workers**
Sources: Chinese National Bureau of Statistics, China Statistical Yearbook 2016, and China Statistical Yearbook 2017.

The trends of productivity and wage growth depicted above have been underpinned by investment growth, and accompanied by consumption growth. As can be seen from Table 2, in the period 1978-2000, the average annual real growth rate of consumption (deflated by the consumer price index) was 8.92%, which was close to the investment growth rate (deflated by the investment price index) of 9.35%. Entering the period 2000-2012, consumption growth increased slightly to 10.14%, amid the acceleration of investment growth to reach a high rate of 15.01%. Thereafter, in

the period 2012-2016, consumption growth fell back to 8.06% a year, whilst investment growth fell even more abruptly to 7.04%.

| | Consumption | Investment |
|---|---|---|
| 1978-2000 | 8.92 | 9.35 |
| 2000-2012 | 10.14 | 15.01 |
| 2012-2016 | 8.06 | 7.04 |

**Table 2. Average annual real growth rates (%) of consumption and investment**
Sources: Chinese National Bureau of Statistics, China Statistical Yearbook 2016, and China Statistical Yearbook 2017.
Notes: Data are consumption and investment (i.e., gross capital formation) components of GDP by expenditures approach. Consumption growth is deflated by the consumer price index; investment growth is deflated by the investment price index.

The synchronous fast pace of growth in the period of 2000-2012 between productivity and the wage rate, and between investment and consumption, stands in contrast to the performance both in the preceding period and in the subsequent years. In particular, this synchrony appears to be antithetical to the nexus of developments related to the worsening economic situation from 2012 onward, as detailed in the previous sections of the paper. The fast consumption growth, underpinned by wage growth, provided the demand conditions for economic growth. In the meantime, the wage growth was based on comparable productivity growth and thus would not undermine the momentum for investment growth. On the whole, a balance seemed to be in existence between these two pairs of variables, thereby generating the good outcomes in terms of both economic and social development.

What are the structural-institutional conditions that underpinned the synchronous growth of these crucial variables, and therefore the developmental outcomes? Why have the conditions been undermined under the New Normal? Elsewhere in the literature, there exists a thesis stating that, since the turn of the century, the Chinese economy has been on the path of converging to a model that is said to have operated in advanced capitalist countries in the ‘Golden Age’ of 1950-1973. This path of convergence, as well as the disruptions which it has faced, might help to explain the twists and turns of economic development from the early 2000s until the present time.[7]

Theoretically, the Golden Age Model can be characterized as having as its pillars the three agents of 'Big Business, Big Labor, and Big Government'. Big Business refers to the prevalence of an investment-led, capital-deepening growth path and the associated predominance of large-scale enterprises. Rapid productivity growth based on dynamic increasing returns is the *raison d'etre* of Big Business. Big Labor takes the form of collective bargaining over wage settlement, therefore serving as a countervailing force of capital in the determination of income distribution. It also often has the property of promoting the collective learning that is conducive to productivity growth. Big Government refers to the welfare state, which is helpful both for lowering labor costs for individual business firms and for supporting the mass consumption that is necessary for the utilization of dynamic returns from mass production (Glyn *et al.*, 1990; Glyn, 2006; Lazonick, 2009).[9]

In the case of China in the period of 2000-2012, along with rapid investment growth, was the famous phenomenon known as 'guo jin min tui' (the state sector advances, whilst the private sector retreats). The SOEs that embodied the advancement are large-scale, capital-intensive firms. They are the Big Business in China (China Economic Net, 2017).[10] Meanwhile, also in relation to rapid investment growth, was productivity growth. This formed the material condition for the equally rapid wage growth, which was further made possible by the nascent formation of Big Labor – evident not only in the wage growth itself but also in institutional and policy moves such as minimum wage legislations, the Employment Contract Law, collective bargaining, and unionization. Finally, Big Government takes the form of the state orienting itself towards rebuilding a comprehensive welfare system. Within a ten-year period, 2003-2013, a publicly-funded healthcare system was established to cover almost the entire population. The provision of

[9] For a detailed exposition of the internal dynamics, and historical experience, of the Golden Age Model in advanced capitalist economies in 1950-1973, see Glyn *et al.* (1990). Glyn (2006) further compares and contrasts the 'Golden Age model' with the 'neoliberal globalization model' that prevails worldwide after 1980. Lazonick (2009) provides a complementary, more micro-focused work by comparing what he calls the 'Old Economy Business Model' with the 'New Economy Business Model'.

[10] In 2016, of the 109 (mainland) Chinese firms that were among the *Fortune 500*'s biggest companies (by sales revenues) in the world, 80% were state-owned enterprises; for details, see http://news.xhby.net/system/2017/07/21/030714725.shtml.

affordable housing for urban low-income people, mostly immigrants from rural areas, has also been on the government agenda. Most far-reaching, the range of policy measures aimed at promoting labor compensation-enhancing economic growth, rather than growth based on 'cheap labor', testify to the new state orientation.

The recurring disruptions to the path of convergence to the Golden Age Model under the New Normal could also be attributed to state orientation. Discernibly, a process of financialization of the economy has occurred post-2008. By crowding out productive investment, speculative activities tend to undermine productive activities, leading to the problem of rents squeezing profits. Long term, by curtailing the foundation of wage growth (and hence consumption growth) via its negative impact on productivity growth, financialization also tends to worsen the problem of demand deficiency.

The clearest symptom of the financialization of the Chinese economy post-2008 is the speculative bubbles in the real estate sector and the stock market. The booms and busts in these sectors have been spectacular, attracting widespread concerns, not just in China, but rather across the world. In particular, the stock market crash in summer 2015 and the progressive devaluation of the Chinese currency from that time reflect the precipitation of capital in speculative activities, the inward and outward flows of international 'hot money', and capital flights.

At the aggregate level, financialization can be gauged by observing the massive expansion in the stock of 'total social financing to the real economy' (TSF). This indicator encompasses bank loans and a wide range of alternative forms of financing, carried out by a wide range of non-bank financial institutions. In the years 2003-2008, the ratio of TSF to GDP remained basically unchanged. Thereafter, it surged from 149% in the year-end of 2008 to reach 208% by the year-end of 2016. Along with the increase in TSF as a ratio to GDP, the stock of bank loans as a ratio to GDP increased from 93% in 2008 (slightly below the level of 97% in 2002) to 141% in 2016.

And other types of financing increased from 25% (the same level both in 2002 and 2008) to 68% in the meantime (People's Bank of China, 2017).[11]

Chinese banks, of which the biggest ones are all state banks, have traditionally been under tough government controls and regulations. The process of financial liberalization post-2008, however, has largely set them free to participate in speculative activities. There have been many reports of state banks conducting unregulated shadow banking activities in the pursuit of speculative gains. In comparison, non-bank financing activities have been subject to even fewer government controls and regulations. The fact that both types of financing have expanded tremendously can only result in the precipitation of capital in speculative activities. The other side of the coin is the crowding out of productive investment, which has reached crisis-prone levels since summer 2015.

**Conclusions**

The cause of the slowdown in investment growth, and therefore economic growth, in China under the New Normal is complex. Both demand deficiency and profitability decline are ascribable to a multitude of forces that are rooted in the prevailing structural-institutional conditions as well as the internally divisive state orientation. Reshaping the model of economic transformation is thus needed for sustaining long-term development.

Since the turn of the century, there has been a rivalry between two alternative directions for Chinese economic transformation. These, namely, are the convergence to the Golden Age Model and the tendency of financializing the economy. Put another way, the rivalry is between the consolidation of a production-oriented model, on one side, and the transition to a speculation-oriented model, on the other side. It is discernible that the prevalence of the speculation-oriented model has mainly accounted for the economic problems that have actually occurred under the New Normal.

[11] TSF data from the data bank of the People's Bank of China, accessed on 2 September 2017, http://www.pbc.gov.cn/diaochatongjisi/116219/index.htmlhttp://www.pbc.gov.cn/diaochatongjisi/116219/index.html.

Against this background, it is understandable that, after the stock market crash in summer 2015 and the continuous worsening of economic performance, the Chinese state leadership has reoriented itself to turn to emphasize curtailing speculative activities and promoting productive activities. This effectively entails a resumption, or speeding up, of the convergence to the Golden Age Model. Whether this orientation can achieve the hoped-for outcome of medium-speed or high-speed economic growth, however, remains to be seen.

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# China's Image from the Perspective of the Developmental State: What Kind of "Developmental State" is China?

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**Abstract:** The developmental state has become a popular definition used to discuss the "China Model". Based on the developmental state, various definitions have originated. Concepts such as new developmental states and neo-developmentalism are widely applied to describe Chinese development. This paper summarizes representative opinions in examining China from the perspective of the developmental state, and reevaluates the specificity and characteristics of the Chinese developmental state in terms of structural dynamism. We believe that the developmental state as a concept is not precisely defined. Instead, its application and extension must incorporate considerations of historical specificity and subject continuity. Considering such initial constraints as politics, economics, and military conditions, China differs significantly from other classic examples of East Asian developmental states. Consequently, China would also face different developmental paths, directions, corresponding policies, and measures from those of other developmental states. The East Asian experiences of developmental states only offer limited scope for reference. Still, in terms of effective integration between markets, governments, and societies, their experiences and lessons prove worthy for consideration and reflection.

**Key words:** developmental state; List; China Model; historical specificity

## Introduction

In research on models of economic development for China, the theory of the developmental state has often become the most *convenient* label. Regardless of consideration for historical, geographical, or cultural backgrounds, researchers have found it difficult for them not to correlate China's development with those of its East Asian neighboring countries. Consensus among researchers states that the growth trajectories of China and its East Asian neighbors shares such similarities as high savings rates, high investment rates, and government leadership. Also acknowledged are characteristics unique to China. For instance, the Chinese official promotion mechanism inspires competition among local governments. China focuses more on the direct state ownership of large-scale enterprises and emphasizes the competitive power of national teams

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(Albert, 2014). Through a process of comparative studies, derivative concepts of developmental states emerged. These include the New Developmental State (NDS) (Trubek, 2010), the Listian Developmental State (Breslin, 2011), and Post-Listian theory (Strange, 2011).

It is more likely that the application of the developmental state concept to China, either directly or correctively, originated from a certain *inertia* of technical jargon. Still, it would be cursory to apply the same logic and assume theories and policies for developmental states would be completely applicable for explaining or even guiding China. Since its coinage, the concept of the developmental state is not a theory of "one size fits all". Rather, it is merely a theoretical framework with historical specificity. No two identical developmental states exist in the world in terms of policies, processes, or performance. Therefore, although various concepts of developmental states applied to China take into consideration China's initial conditions and differing external environments, it is still necessary to prudently analyze the rationality and enlightenment of those concepts. For instance, do key similarities suffice to make China and East Asian countries share concepts of the developmental state, or vice versa? Do the discrepancies between China and other developmental states suggest other root causes of existing problems in Chinese economic development than ones from other East Asian countries? Do those discrepancies mean China may choose a different path for development? This paper aims to clarify the connotations of the developmental state and its derivative concepts and explore their significance for enlightenment.

**Developmental State Theory: A Habitual Classification Tag**

The Beijing Consensus was first raised by Kavaljit Singh in 2002 (Kavaljit, 2002) and was further publicized in 2004 by American scholar Joshua Cooper Ramo through his article *The Beijing Consensus: Notes on the New Physics of Chinese Power*, which kick started hot waves of discussion on the China Model and "China's Rise" in academic circles at home and abroad. Such discussions reached a climax after the economic crisis in 2008. In 2009 alone, the number of papers discussing the China Model totaled 3,000 (Fewsmith, 2011). As Breslin (2011) puts it, researchers from either China or other countries all showed their strong interest in the China Model during and after the economic crisis.

After the Southeast Asian financial crisis of the 1990s, the developmental state theory was heavily criticized. Notably, its key hypothesis, stating that "an autonomic government exists independently under the pressure of the social group" was criticized for its over-idealization. Still, the developmental state remained a major perspective in many discussions around the China Model. A considerable number of scholars believe China is certainly a developmental state (Wang et. al, 2011). Some scholars make amendments to the concepts of the developmental state. Concepts such as NDS, State Capitalism (Schweinberger, 2014), Liberal Neo-Developmentalism, New Listian- and Post-Listian theory were proposed to describe the China Model (Strange, 2011). In fact, the perspective of the developmental state is not limited to research on the China Model, since it is also applied to analyses of other emerging economies like Brazil and India (Haggard, 2013). Developmental state theory has maintained its vitality since its inception in the 1980s for more than 30 years, reinforcing the comments made by Peter Evans. To quote him,

> The idea of the "developmental state" has proved one of the most robust, charismatic concepts in development theory. Following the western-centered modernism theory of 1950s and the dependency theory of 1960s, it is the most suitable theory to depict the economic development of emerging economies, especially so for East Asian countries (Evans, 2013).

The developmental state theory originated from Chalmers Johnson's research on the Japanese economic miracle (Johnson, 1982), and was further improved and developed after Alice H. Amsden's research on South Korea in the post-World War II era (Amsden, 1989), and Robert Wade and Evans 's research on Taiwan (Wade, 1990; Evans, 1995). Yu Zuoen provided an overview on the developmental state theory, characterizing developmental states as countries with sustained aspirations for development, highly-autonomous central economic bureaucratic institutions, close cooperation between government and businesses, and selective industrial polices (Yu, 2008). As far as organizational structures and operational features are concerned, developmental states are characterized by excellent bureaucrats, national independence, market intervention, and planning departments (Johnson, 1982). East Asian countries undertook the developmental state path that differs from liberalism and planned economy, achieving Gerschenkron's ideal of concentrated and accelerated industrialization for catch-up economies. According to the developmental state theory, the historical and cultural specificity of East Asia translates into a high degree of autonomy, paving the way for elite technocrats to possess capacity

and willingness to intervene in the economy, sustaining economic development by providing industry-specific subsidies and various forms of support.

In the formation process of the developmental state theory, representative figures like Johnson and Amsden have proposed different definitions for developmental states, based on their specific case studies. The subject countries all differ in policies and decision-making. This is further complicated when all pioneers of the developmental state theory stress their uniqueness and lack of reproducibility. When discussing the key to success, Johnson attributes Japanese success to the industrial plan of the Japanese Ministry of International Trade and Industry and the close relations between politics and commerce. Amsden believes that the reason for South Korean success lies in its governmental subsidies which distorted prices. In Wade's opinions, the success of Taiwan comes from its guiding markets and triggering free markets. Although they all emphasize the state's effective involvement in the economy, these approaches differ significantly in actual implementation. For instance, South Korea focuses on plutocrats, and Taiwan on medium and small-sized enterprises. Although all the East Asian developmental countries and regions stress that collectivism and a nationalist spirit play crucial roles in the process of building strong nations and economic supremacy, industrial policies and foreign investment policies still differ, with Singapore and Hong Kong more akin to internationalism, Japan displaying nationalist traits, and South Korea evidently showing statism (Zheng, 1996) .

Therefore, many researchers believe that the developmental state is merely an abstract concept instead of a clear and operable one. Harvard University Professor John Knight points out the lack of consensus on what the developmental state really is, despite its apparent popularity as a concept (Knight, 2014). Other scholars believe that historical factors were excluded from consideration when researchers like Johnson studied the characteristics of the developmental state. When their successors expand on such ideal types, the historicity embedded in its embryonic definition is often neglected, rendering it an abstract theoretical model with no attachment to history. From a definition perspective, the developmental state is just the integration and extension of mercantilism, bureaucrat capitalism, corporatism, and state-centrism (Zheng, 1996). From a practical perspective, the developmental state differs considerably in policies, politics-commerce relations, and economic performance across different countries and regions. In addition to the

flaws known to all, such as ignoring the complexity of states and regarding bureaucrat groups as the only decision makers, the developmental state theory is "theoretical materialization" and "tends to be applied to categorize facts and becomes a label to categorize for rapidly developing countries" (Wu,2014). In this sense, the wide use of the developmental state, whether consciously or unconsciously, can be regarded as terminological inertia, rather than a precisely grasped concept. This is exactly why we have to consider with caution the labelling of China as developmental.

**Representative Views on China from the Perspective of the Developmental State**

Various research on China from the perspective of the developmental state can be classified as follows: some believe that, although differences between China and East Asian developmental states exist, such differences do not suffice to constitute a developmental state type unique to China. China today is comparable with Japan before the 1980s and South Korea after the 1990s. Scholars including Knight (2014), Kalinowski (2014), and Baek (2009) champion these beliefs. Others propose that significant differences between China and East Asian developmental states would mean that theories and policy recommendations for developmental states are no longer appropriate for China or other emerging economies. Representative scholars who hold this view include Trubek (2008) and Evans (2013, 2014).

The differences between those two opinions mentioned above are: the former believes that the developmental state is regarded as an inevitable development phase with common features for a backward country to catch up with and surpass developed countries. Consequently, the developmental state in a specific time frame can always find comparable subjects in history. The latter believes the developmental state is a dynamic concept, and the developmental states at different development stages possess different features. Accordingly, the connotations of the concept of the developmental state need to be redefined with renewed meaning.

John B. Knight is one of important representatives of the former opinion. For Knight, the concept of the developmental state has no consensus at a higher level. All states can be called developmental states as long as two conditions are met: firstly, the state regards economic development as its preferential target; and secondly, the state strives to achieve this target through

institutional arrangement and incentive structures[2]. Thus, according to Knight, the first thirty years in the history of China focused on political rather than economic development, and major achievements are reflected in the political field. It was only after 1979 that China began to orient towards economic development as its preferential target, thus becoming a developmental state. Just like many other scholars, he thinks that much development in China is driven by local governments' competition guided by political decentralization, clearly featuring promotional competition. To a large extent, Chinese local governments conform to the definition of developmental states[3]. He concludes that China is a successful developmental state, and China still qualifies as a developmental state to this day. It confronts developmental barriers and risks such as interest groups, social stability, and financial risks, the same as those encountered by other East Asian developmental countries in their early development stages. China should take care about the predicaments and risks that East Asian countries face.

Similar opinions are also held by Korean scholar Baek (2005), Beeson (2010), Kalinowski (2014), and so on. Baek Seung-Wook compares governmental controls over financial resources and export-oriented industrial policies, deriving the conclusion that no substantial difference between China and other East Asian development countries exists, and is extremely like Taiwan. Mark Beeson believes the Chinese and Japanese economic modes share many similarities and can share the label of developmental state. The most fundamental similarity is that, in China and Japan, strong national intervention receives much less criticism than it would in the UK and the USA. Still, Beeson admits that certain problems and characteristics in Chinese institutions are different

[2] Knight does not believe that a developmental state means a high growth rate. In his opinion, whether a state is a developmental state or not cannot be judged from its performance, because it is possible for a state to set economic development as its priority, but this target may fail to be reached due to restricted conditions or ineffective policies. Likewise, a state may achieve a higher growth rate due to accidental factors like good initial conditions and good market opportunities, even if the state does not devise effective institutional arrangements. So, a developmental state does not necessitate rapid economic development, and a state with rapid economic development may not be a developmental state.

[3] Richard Stubbs (2009) also holds such ideas: that Chinese local government fits better with the characteristics of the developmental state.

from those of Japan, especially China's insufficiency in national power and strong dependence on foreign investment. Generally, China is still like Japan, in that,

> to employ a comprehensive path of technological upgrading, security and development, even if China does not have similar capacity, it still has similar determination (对于采取一种全面的技术升级、安全和发展的道路，中国即便没有类似的能力，也有类似的决心 *duiyu caiqu yizhong quanmian de jishu shengji*、*anquan he fazhan de daolu, Zhongguo jibian meiyou leisi de nengli, yeyou leisi de juexin*) (Beeson, 2010:76).

In accordance with formal differences in governments' expenditure, economic intervention methods, and market coordinating approaches, Thomas Kalinowski (2014) believes that China today is similar to Japan before the 1980s and South Korea before the 1990s, featuring protectionism and clear macroeconomic plans.

| | **Government's Expenditures** | **Main Roles of The State** | **Interactive Modes** | **Category** |
|---|---|---|---|---|
| **Regulatory State** | Small | Providing Institutional Structures | Markets | The USA |
| **New Corporatism** | Big | Promoting Collaboration among Interest Groups | Collaborating, Adjusting | Germany |
| **Welfare State** | Big | Redistribution | Collaborating, Adjusting | Sweden |
| **Developmental State** | Small | Macro-Plan for Growth and Protectionism | Tiered Systems, Dominated by The State | Japan before the 1980s, South Korea before the 1990s and Modern China |
| **New Developmental State** | Growth | Corporate Development, Micro-Intervention and Subsidy | Tier Dominated by Enterprises | Japan after the 1980s, South Korea after the 1990s |

**Table 1: Types of Capitalism**
Source: Kalinowski (2014)

The second view is championed by Trubek (2010) of University of Wisconsin-Madison and Evans (2013, 2014), a key figure in the developmental state theory. Trubek asserts that it is more appropriate to use the NDS theory to describe the BRIC countries (Brazil, Russia, India, and China). Based on the different degrees of state intervention and economic openness, Trubek classifies

developmental states into three types. The first refers to Classical Developmental States - like Germany - characterized by strong national intervention, weak economic openness, and evident protectionism. The second is Asian Developmental States, featuring strong national intervention and relative economic openness, while restricting foreign direct investment. The third is NDS, represented by the BRIC countries, which have strong government intervention, but are more open in economy than the former two. Trubek highlights the lapsing of an epoch, when it was possible for backward countries to collectively kick start short-term industrialization and catch up with or surpass developed countries, because of global supply chains, information technology development, and the rise of the knowledge-based economy. It is important for NDSs to go beyond the East Asian experience and establish a new political economics of developmental states for themselves[4].

Although both scholars use the concept of the NDS, Evans aligns with embeddedness and focuses more attention on the amendment of the targets of the developmental state and on the adjustment of relations between the state, society, and enterprises (Evans, 2013, 2014). In the opinion of Evans, the developmental state theory must surpass the singular economic development target and instead emphasize expanding human capacity, a Senian approach at its core, i.e., human development is not only the ultimate target for development, but also a crucial measure for raising productivity (Evans, 2013). Evans stresses embeddedness, especially the impact of such factors as state competence, state-society ties, national strength, and civil society on achieving developmental state targets and human development targets. In his opinion, the most crucial factor is the competent, continuous, and stable public service agencies, without which it is difficult to reach the targets of human development and human capacity expansion. He emphasizes that large developing countries like China and India are certainly different from traditional East Asian

[4] Trubek summarizes the core political assertions of the New Developmental State political economy: to achieve the specific niche and strengthen technological and innovative capacities through planned investment with special purpose, enhance its position in the global supply chain, have a major reliance on private investment instead of government investment, prefer to strengthen entrepreneurship and product innovation rather than relying on imported technology, promote productive rather than speculative FDI, intensify competition not protection among private businesses, leverage the capital market in allocating resources, and decrease inequality to guarantee social stability, etc. (D. Trubek, 2010).

developmental states. They have more complex national structures, more sophisticated state-society ties, and interactive modes. They both confront a similar issue while rapidly developing: the political strength of the increasingly strong capital which is likely to destroy state competence and prevent them from reaching their developmental state targets if there is no strong countervailing social force.

**Structural Dynamism and the Diversity of Developmental States**

For the above-mentioned points, we can find many counter-factual as rebuttals or to verify our points further. For instance, John B. Knight overly emphasizes commonalities among developmental states, while overlooking their differences. East Asian developmental countries have experienced problems including with interest groups, social stability issues, and financial risks, all of which are certainly present in China, but the root causes still differ. Even for those East Asian developmental states, the reasons and representations of those problems are not entirely alike. It is also questionable for Thomas Kalinowski to believe that trade protectionism is the similar trait between China and the early stages of Japan and South Korea. It is more plausible that they lacked protectionism and foreign investments, with an over-reliance on external markets (Huang, 2008; Jia, 2015). Even if Chinese development is one of protectionism, its focus and formation mechanism also differs from that of the early stages of Japanese and South Korean protectionism. Japanese-South Korean protectionism was possible because of the US' tolerance of neo-mercantilism in the Cold War context, allowing Japan and South Korea to benefit from leveraging the fast-expanding international economy to enter key European and North American markets relatively freely, without having to open up domestic markets.

This paper aims to address Chinese conditions from the lens of Western academia's developmental state theory. It does not attempt to provide a comprehensive evaluation. As a historically specific and non-universal theoretical framework, the images under the lens of the developmental state can be innumerable. In our opinion, the most valuable question is whether a common success mechanism among a plethora of developmental states exists. We do not believe the answer lies in baskets of policy recommendations, for from a cause-effect view, policies from all successful developmental states are formulated, implemented, and effected under specific external environments and in differing internal conditions. Without temporal-specific conditions,

these policies may not be transferable to different subjects. However, the continuous and repeated successes of the developmental state model in the world over an extended period of time indicates the potential for success for state-led economic development, and more crucially it demonstrates the existence of a certain kind of specific cause-effect mechanism. We will benefit from these diverse forms of developmental state theory if we explore such a cause and effect mechanism.

From Johnson to Evans, none of the theoretical founders of the developmental state theory has given a convincing answer to this question. For them, success may be traced back to competent government agencies and carefully orchestrated industrial polices (Chalmer, 1982), or from the state's competence in embedding the economy (Evans, 1995), or from effective bureaucratic systems and embedding the economy (Kasahara, 2013). It is easy to understand that their differences are more likely a result of case studies; therefore, their conclusions are characteristic of a specific case study, without attaining a generic answer appropriate for guidance. Inheriting traditions from Liszt and J. A. Joseph Alois Schumpeter, and researching the development experience of Germany and the East Asian countries, Reinert and Zhang Xia draw the conclusion that choosing a correct industrial activity (of increasing returns) is a good path for economic empowerment and state growth. Scholars have conducted extensive discussions on how to choose and promote these correct industrial activities, based on the third technology revolution and new features of global trade and the division of work (Jia, 2015; Reinert, 2010). Still, we have to ask if selecting correct industrial activities is a method by itself, or already part of the target. If we admit that the formation and operation of the developmental state are two different processes, then the choice of correct industrial activities is just a path to building a wealthy and strong country, instead of the wealthy and strong country itself. How then can we reach the aim, even if we choose the correct direction?

The developmental state does not just mean that government intervention must happen; otherwise all countries of the world are developmental states. Likewise, the developmental state does not mean that the government must support or guide a specialized department because it is a common policy characteristic that echoes from the past to the present for all countries[5]. Historically,

[5] For example, Block F believes USA is a hidden developmental state, and its power can be found in supporting national innovation system and effective intervening in new technological sectors and strategic industries. This power has been growing in the past three decades, which can be seen

the developmental state only refers to those countries where the state plays a role as the social engine in the process of restructuring national economic systems. Tracing from the developmental state back to Liszt, it only refers to a country which accelerates and drives the transfer of a primary, primitive, and agricultural economic system into a modern manufacturing-based industrial system (Kasahara, 2013). According Woo-Cumings (1999), the developmental state model can be used to describe the mercantilism period of modern Europe, and later the rising periods of Germany and the USA. Shaun Breslin believes that the developmental state described by Liszt indicates a continuity between the China Model and early Asian developmentalism model and even earlier European and American state-dominated development systems exists (Breslin, 2011).

Therefore, a more comprehensive and dynamic perspective should consider the development process of the developmental state as the formation process of the modern market economy country dominated by the government, not from the perspective of a special policy package. Although government dominance is a shared characteristic for developmental states, it is just a starting point, not the destination. According to Jessup, a representative of the Regulation School, the formation of an effective development model is the result of the coordination and cooperation between market mechanism, state intervention, and social structure as a driving mechanism for structuralizing, rather than originating purely from the state. So, the story of East Asian countries is the story that those countries achieve state-economy-society structural correspondence in their rapid industrialization process in the Cold War period (Jessop and Cho, 2001; He, 2011). From this point of view, we can discuss the essence of the developmental state. A developmental state is a country without an effective market mechanism and state management at the very beginning, one that lacks mature social structures or mature market subjects or civil societies. Under a collective desire for economic development, government mobilizes, organizes, inspires, and leads societal and economic entities, and eventually drives a spontaneous and internally driven market economy in the right industrial direction. It may be authoritarian or liberal, but its final goal is to form an economy which is dominated by internal economic incentives and possesses internal driving forces. The government is extremely important to the developmental state because it is the sole possible

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from NASA and Advanced Projects Research Agency (ARPA). The same happens to Europe. See (Block F, 2008).

and legal mobilizer and organizer at the very beginning. Embeddedness is crucial to the developmental state because the government can only guide economic and social entities to realize economic and social goals, not replace them. Instead, it must maintain a distance with the market and society, but still maintain a reasonable direction[6]. It must find a delicate balance between permeating and extruding, and between inspiring and restraining. The developmental state has to change from the idea that "the country should complete social and economic targets in a planned and reasonable way" into the idea that "internally driven market subjects and civil society should complete social and economic targets". In this change process, the difference between internal and external initial conditions and the gap in subjective initiatives would lead to different characteristics of development paths. This is the real reason for the diversity of developmental states.

If we observe the developmental state from the perspective of structural dynamism, we can explain *development* and understand "why this type of development, not that type". Any developmental state is confronted with specific internal and external constraints[7]. The internal constraints include resource endowments, social structures and corresponding political patterns, initial market development (like the initial distribution of market entities, ownership systems, scales, etc.), and bureaucratic capacity, etc. The external constraints include external economic conditions (the stages of technological long waves, international division of labor, and trade order), and external political and military conditions (alliances and opposing forces). Objectively, internal and external constraints provide the whole possibility set for state actions. In the development process of the developmental state, those conditions will change accordingly. For instance, the

[6] The defects of the developmental state mainly come from embedding difficulties. According to Mark Beeson, the risks and skills of the developmental state are that its bureaucracies should be strong enough and good at coordinating and approaching society and economic operators. Only in this way can policies be implemented and development "guided". If the bureaucracies keep too close a relation with special interest groups, they will become the "captives" or servants of the latter. This is the reason for "crony capitalism".

[7] Some scholar believes that the change of social structures is the basic factor to determine political systems, mechanisms, and the choice and implementation of development strategies of the industrialization era (Fang Ning 2015), but in our opinion, it is just one of the internal constraints.

growth of the developmental state leads to changes in domestic social, political, and economic situations, or external political, economic, and military conditions. The policies of the developmental state have to adapt to such changes, so that developmental goals may be reached with success. The differences of the initial constraints are manifested in different path-dependency. Dynamic changes to environmental factors would create different paths for developmental states. Historically, successful developmental states have set their successful development directions based on their initial constraints, and then adjust along with the changes of those constraints.

**What Kind of "Development" State is China?**

The development process of East Asian developmental states fully demonstrates the structural dynamic evolutionary process of modern market economic countries dominated by the government. The reason for their developmental similarities and dissimilarities can be found in their internal and external restraining conditions and dynamic changes. Judging from the developmental paths of the first-tier Asian Newly Industrialized Economics (Japan, South Korea, Singapore and Taiwan), the similarities of their initial external conditions go as follows: in political and military conditions, they all belonged to the Western group in the Cold War and shared the same ideology and political system as the UK and the USA. Therefore, they could benefit from external economic aid to different degrees, realize the first wave of capital accumulation, and establish their industrial systems accordingly[8]. They were all allowed tacitly to deploy protectionism through various kinds of subsidies and apply strict controls over foreign capital, in the process of building up and supporting targeted sectors[9]. When European countries allow those countries to take the protectionism measures mentioned above, they open their markets to those countries not in a coordinated way and take loose policies towards technology transfer and intellectual property

[8] The relevant statistics show Japan received orders up to USD 3.4 billion during the Korean War. Johansson regarded American aid to Japan as an Asian Marshall Plan. Taiwan and South Korea had the similar advantageous external conditions during the Vietnam War. In 1946-1978, South Korea obtained economic aid and loans up to USD 6 billion.

[9] Singapore is the sole exception. Singapore, independent since 1965, did not enjoy benefits from the Korean War, and had no natural resources for sale. Its only advantageous condition is its ports. It is extremely capital thirsty in terms of capital accumulation and industry initiation. This resulted in Singapore showing extreme tolerance, welcoming and even stimulating policies for foreign capital represented by multinational corporates in its initial development (Kasahara, 2013).

rights. In external technological conditions, the first-tier Asian Newly Industrialized Economies all went through the mature stage of the fourth technological tide, as well as the fifth technological tide. In their process of economic development, the global value chain has not taken shape. The division of labor between products was the main form of the international division of labor. Multinational corporations had not reached the monopoly levels of power they enjoy today. This significantly eased the way for these countries to catch up with technologies and create unique technological niches.

As far as internal similarities are concerned, the countries and regions mentioned above possess three common advantages: it is easy for them to reach a consensus in surpassing the developed countries economically, and they possess excellent bureaucratic classes, as well as a large quantity of easily activated potential market entities. Firstly, the beginning of their economic development also saw the emergence of the Cold War environment. Due to historical reasons, those countries and regions were confronted with strong external pressure, and therefore a spirit of nationalism was necessary and easy to come by. Achieving rapid economic development as a goal is a necessary measure to strengthen the legality of a government's performance, and the cost of social cohesion and mobilization is lower. Hence, it was possible to make economic development the primary target. Secondly, the bureaucratic classes shared a strong consensus in their inclination towards a free market. Those countries had many technocrats with relevant knowledge and experience, which makes them possible competent drivers of the developmental state. Thirdly, in the early period when the first-tier Asian Newly Industrialized Economies became developmental states, they all went through enormous social structural changes through war or reform, the fixed boundary between social classes and interest groups loosened, and society tended to be "flattened", which made it possible to

> Adopt a directional and constraining special political system and development strategy to direct social flow to the economic field in the industrialization process. The wide and strong powers for economic growth took form and political participation and political dispute were limited (Fang Ning, 2015).[10]

[10]Fang Ning calls those countries having gone through the changes of social structures the "rapid countries" of Asia, and those without having gone through the changes of social structures "slow countries", the Philippines being one of the latter. Measures to stimulate the economy made by the

Briefly speaking, those countries possessed many potential market entities with lower activated cost.

We will not discuss the dissimilarities existing between these developmental states due to the limited length of the paper. It should be noted that comprehending the theory and making a case study should all start with special historical contexts. Without understanding the pre-World War II Japanese economy, it would be impossible to appreciate the technological and talent foundations for the post-World War II Japanese miracle. Without the context of Singapore's independence, it would be impossible to analyze the formation of its internationalism-oriented system. Without full recognition of Chinese uniqueness in internal and external constraints after China confirmed its prioritization of economic development, without appreciating the continuity of Chinese socio-economic development in the first and second thirty years period, it would be impossible to grasp the specialness of China from the perspective of the developmental state. In summary, the internal and external constraints confronting China and the changes originating from changes of those conditions all differ from those of other developmental states, except the consistency of the legality of economic development targets and in collective will. This indicates that the developmental state path China took has been a unique one since the very beginning.

From the view of initial external political and military conditions, China did have the kind of opportunities that Japan and South Korea had. It is also impractical to adopt the same model as what these two countries did. Frankly, China has always been confronted with distrust, vigilance, repression, and precaution since the very beginning of its development. With long-term changes in the international order, the effects of China's rise would certainly overshadow that of Japan, South Korea, and other regions, because "the new developmental state like China has the ability to become a competitor and challenger of international orders" (Trubek, 2008). From the view of external economic conditions, China has been facing a severe technology lockdown and the limitation of intellectual property rights from technologically developed countries since the very beginning. When China became more fully embedded in the global labor division system and trade system, symbolized by its entry into the membership of the World Trade Organization, the global

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former are easier to be implemented than those in the latter.

value chain had mostly been formed. Under the context of modular manufacturing and intra-production labor division, Chinese technological advancement is limited in strength and nature, which sets itself apart from any other developmental state. Also, China cannot develop under the U.S. dollar-based system as did Japan and South Korea. China's impact on the staple commodities like energies and China's economic development's impact on the world labor force's markets and labor division order are enormous and profound. As Shawn Breslin puts it, China's integration into the world economy will unavoidably bring about great losses of jobs for many other countries and the resetting of their development strategies due to its cheaper production platforms. The Asian-Pacific political and economic situations will be redefined because of this (Breslin, 2005).

For initial internal conditions, China differs significantly from other developmental states in social and economic structures, and economic bureaucratic classes. They only share the premise of being "easy to reach the consensus of surpassing developed economies". The source of this difference comes from the planned economic foundation that China had. The evolutionary process of China's market economy is also a transformation process for its planned economy. While countries like Japan and South Korea embraced liberal markets without hesitation, China has always consistently insisted on its exploration of a socialist path with Chinese characteristics. China has been cautious about the intense and rapid reform of political and economic structures, which sets it apart from Eastern European countries. When China clarified economic development as its preferred goal, the preferences and competences of economic bureaucrats formed in the planned economy era, as well as the economic entities and social structures formed in the same era, became key in comprehending the initial internal constraints.

As far as economic bureaucrats are concerned, Japan and South Korea had a plethora of technocrats with extensive knowledge, rich experience, and a strong consensus to develop free markets. Comparatively, China had a batch of bureaucratic strata with consistent political ideology, loyalty, and rich experience in planned economy management. Japan and South Korea are likely to ensure continuity due to common preferences and, because of the separation of powers, their policy implementation can be easily misaligned and counteract one another. The difference on the level of government management means that, at least, China does not suffer from the same issues. As Shaun Breslin stated, when devising policies, the Chinese government often sacrifices rationality, harmoniousness, and uniformity, out of concern over maintaining party unity and

avoiding opposition from local government. The development policies from the Central Government are often distorted or boycotted when implemented on a local level, making the effective national implementation of economic coordination an arduous task (Breslin, 1996).

When inspecting economic entities, the enormous state-owned economy from the planned economy era is undoubtedly the major economic entity, but it is not an absolute market economy entity. Between the state and urban residents, between state-owned enterprise managers and employees, implicit contracts such as lifetime employment and other welfare promises always existed. It is not an easy task to activate and modify them towards marketization. Comparatively, potential and easily activated economic entities lie in rural collective and private enterprises. Market economy entities and external supports are lacking, and state-owned economy takes charge. Under such a premise, Chinese development chose peripheral reform outside of the established system and this released vitality from economic entities with least resistance. The differences in the structure of economic entities have persisted for more than thirty years of development. This well explains why the reform of state-owned enterprises has been an important issue for China's economic and social development.

The wide differences in initial external and internal conditions mean that China's so-called "developmental state" has differed from other East Asian developmental states from the very beginning. Although some researchers believe that there is no such thing as "China miracle" from the perspective of economic development (Wang, 2011), they fail to answer the question "Why does it develop like this?" In terms of economic policies and performances, we can find the "East Asian Phenomenon" that corresponds to "China Phenomenon", but their similarities in phenomenon do not indicate an identical cause-effect mechanism. Rather,

> The repetition of comparative studies does not just exist at the phenomenon level, and observation and comparison of the repetition are not conducted at the phenomenon level either (Fang, 2015).

Historically, strategic imitation and policy imitation ignoring differences always fails to achieve expected results. In this respect, the international economic circulation strategy in 1990s is typically representative. This strategy abandons the past economic development strategy

dependent on the internal division of labor and domestic demands[11], and turns to external markets and foreign capital for support. Japan, South Korea, and other countries used similar strategies. China is different from Japan and South Korea, in that China has a potential big market ranging from producer goods to consumer goods. Japan and South Korea used an export-oriented development strategy after a complete deepening of their internal division of labor. This export-oriented development strategy is a way to set free production capability, achieve capital accumulation through external demands, and obtain an opportunity to create a technological niche. China's export-oriented strategy started before its internal division of labor was sufficiently deepened and domestic demand market fully expanded. In the context of module-based production and divided global value chains, China was unable to imitate Japan and South Korea, which actively developed export-oriented economies and exported to developed countries. Instead, China had to reverse that path, accepting Western developed countries deploying market protection for domestic high-end products while opening China's own high-end product market for Western exports. It also had to accept an *assembling-based economy* and *enclave economy* in the context of the export-oriented economy and bear the infamy of "Chinese style deception"[12]. Therefore, the international economic circulation strategy fails to reach the expected result. On the contrary, it led to the siphoning of the capital and resources of the labor force to coastal export-oriented sectors, producing a misshapen "dual economy" which separated export and domestic demands, curbed domestic demands, and led to serious economic bubbles (Jia, 2010).

The differences in initial external and internal conditions make China a special "developmental state" and make us cautious about the experiences and failures of East Asian

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[11] According to the statistics and analysis made by Huang Yasheng, China's rural economy and domestic demand-oriented economic reform had made enormous progress in economic growth, income distribution, and employment before it turned to foreign demand and foreign investment. Economic growth is driven by consumption and family-based consumption, accounting for half of the GDP. In his opinion, China's economic rise starting from the late 1970s is attributable to domestic rural economic development and internal reform and limited external reform.

[12] This term came from the trade war between China and the US for textiles of 30132003. According to a New York Times report, China did not obey the relevant rules after its entrance into the WTO and partook in a so called Chinese style deception. Please refer to David Barboza, 'Textile industry seeks trade limits on Chinese', New York Times, 25 July 2003.

developmental states. From the perspective of market economic growth and national modernization level, those successes and failures are worth learning from. In fact, there is much to be learned from all developmental states and successful market economic states on how they achieved a dynamic balance between state, society, and economy. Usually, a country does not have mature market mechanisms, market entities, or a mature civil society in the infancy of its market economy. Its first task is to foster and guide market mechanisms, and help market subjects and civil society to grow. What measures should be made depend on its internal and external constraints. With gradual development of market mechanisms, market entities, and civil society, how a state dominates markets, manages its society, and achieves effective embeddedness becomes more important. Despite over 30 years of reform and opening, China has yet to establish an effective mechanism harmoniously integrating market mechanisms, government intervention, and social structures. It is certainly important to summarize and compare China's various fields and aspects of Chinese economic development, but the essential radical issue still goes back to the issue of a socialist market economy with Chinese characteristics. More efforts should be made in research on how a self-driven market economic system takes form.

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# An Empirical Research Paper on the Impact of China-Japan Relations on Chinese Export Quality：Based on the Perspective of the Triangle Trade in the East Asian Production Network

*Li Ping*[1] *and Liu Yongquan*[2]

**Abstract：** Japan's detainment of Chinese fishing boats in 2010 and purchase of China's Diaoyu Islands in 2012 tremendously harmed diplomatic relations between China and Japan, and had a negative impact on bilateral trade. This paper aims to analyze the impact of China-Japan relations and China's participation in the Japan-centered East Asian production network on China's export quality. The empirical research results based on the trade data of the mechanical and electrical industries indicate that China's participation in the Japan-centered triangle trade enhances the quality of Chinese mechanical and electrical exports, and China should continue to strive for its integration into the Japan-centered East Asian production network.

**Key words:** China-Japan relations; triangle trade; East Asian production network; export sophistication level

## Introduction

China and Japan are, respectively, the world's second and third-largest economies, and two of the largest East Asian economies. China is the largest trading partner of Japan, and Japan is the second largest trading partner of China, and they are each other's most important trade partners. Integration into the East Asian production network is the most important way for China to participate in the division of global value chains. The East Asian production network forms a triangular trade model, with Japan as its core and China as the export platform. Leveraging on this, China has become a global manufacturing and export platform for mechanical and electrical products. Relations between the two countries became tense in 2010 due to Japan's detainment of Chinese fishing boats. Bilateral relations worsened in 2012 due to China-Japan territorial conflicts over the purchase of China's Diaoyu Islands. Tension in political conflicts led to a negative influence on China-Japan bilateral trades. By using sampling from mechanical and electrical

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products, this paper aims to investigate Chinese participation in the East Asian production network, with Japan at its core, and its impact on Chinese trades and especially the quality of Chinese exports from the perspective of triangle trade. The thesis hopes to provide theoretical support and policy suggestions for the sound development of China-Japan trade and Chinese foreign trade.

**Literature Review**

In 2002, most East Asian countries and regions participated in the East Asian production network, giving significantly higher emphasis to the regional trade of components and parts and semi-manufactured goods (Ando & Kimura, 2003); In 2007, the export of intermediate goods among East Asian countries increased when the East Asian production network strengthened (Wang & Wei, 2007); in 2006, mechanical products accounted for 70% of the total volume of the East Asian trade structure, so machinery is a dominant force in East Asian economic development (Athukorala & Yamashita, 2006). In 2010, the export of intermediate components and parts in the mechanical industry played a vital role in East Asia, and China became the most important export platform for mechanical products in East Asia (Kimura & Obashi, 2010).

2010 witnessed the growing tension in China-Japan relations on account of Japan's detaining Chinese fishermen, and 2012 saw their worsening relations due to Japan's purchase of China's Diaoyu Island, greatly harming bilateral trade. Do the worsening bilateral ties of the two countries influence China's export quality? On the one hand, China actively integrates itself into the East Asian Japan-centered production network through the triangle trade; on the other hand, mechanical and electrical products play an essential role in the East Asian production network, and they rank as China's largest export product. Therefore, this paper will take mechanical and electrical products as samples to analyze the influence of the triangle trade of the East Asian production network, with Japan as its core, on China's export quality. This discussion is sure to be of great significance to China's participation in the East Asian production network and the sound development of China's foreign trade.

The structure of the paper goes as follows: the paper first describes and estimates the status quo of China-Japan trade, triangle trade, and China's export quality; then, with mechanical and electrical industry as the sample, triangle trade as the explanatory variable, and export quality as the explained variable, the paper establishes a model to empirically analyze the impact of China's

integration into the East Asian production network on China's export quality. The paper then introduces the dummy variables of China-Japan relations to empirically analyze China-Japan relations' influence on China's export quality. From these results, a conclusion is derived.

**The Status Quo of China-Japan Trade Ties and Relevant Exponent Measurements**

China and Japan have close trade ties and they are each other's most important trade partners. According to Table 1, China's import from and export to Japan grew rapidly in 2002 when China entered the World Trade Organization. Between 2002 and 2014, China's export to and import from Japan grew by 9.84% and 9.73% respectively. As far as the total trade value is concerned, China-Japan trade experienced a declining trend after 2011. More specifically, China's export to Japan showed an N-shape increasing trend. Before 2008, China's export to Japan continued to increase. While export declined after 2008, it swiftly recovered and turned into increasing trend in 2009. However, since 2011, the annual volume of China's export to Japan hovered around USD 150 billion, and the export maintained an M-shape rise. Three inflection points appeared in 2008, 2009, and 2011 respectively. After 2011, China's exports to Japan tended to go down. In 2014, the export volume amounted to USD 162.996 billion. Overall changes in total trade value maintained similar levels with import value, i.e., after 2011, the bilateral trade value began to decline and it decreased to USD 312.438 billion in 2014 from USD 342.89 billion in 2011. Japanese statistics showed that a certain difference between Japan-China export value and import statistics from Chinese sources existed, but overall data for total trade value is consistent from two countries, apart from 2014 data.

What happened to Japan's foreign direct investment (FDI) in China when the bilateral trade began to decrease after 2011? Table 1 shows that M-shape changes occurred to Japan's FDI in China: before 2005 the FDI increased; after 2005 it began to decline; in 2007 it reached a record low of USD 3.59 billion; for three years after 2007 it maintained a low level, and began to increase slowly; in 2011 it skyrocketed to USD 6.35 billion, and in 2012 it reached its peak value of USD 7.38 billion, before declining and reaching USD 4.33 billion in 2014. In conclusion, Japan's FDI in China fluctuated remarkably between 2002 and 2014. China-Japan trade value declined after 2011, and Japanese FDI in China began to decline after 2012. The reason lies in Japan's purchase of the Chinese Diaoyu Islands, which worsened the two countries' ties and directly led to the decline of the China-Japan trade value.

| | China's Export to and Import | Japan's Export to and | Japan's FDI in |
|---|---|---|---|

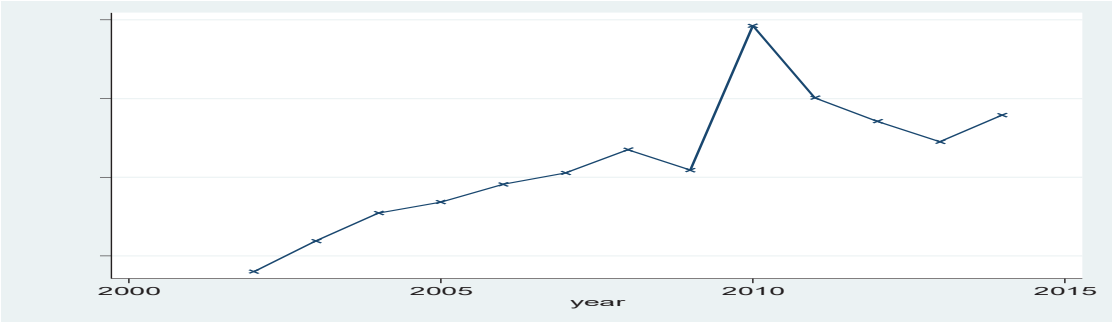
| | from Japan (USD 100 Million ) | | | Import from China (USD One Million ) | | | China(USD 100 Million ) |
|---|---|---|---|---|---|---|---|
| Year | Export | Import | Trade Value | Export | Import | Trade Value | Actual Use |
| 2002 | 484.32 | 534.57 | 1018.89 | 39866 | 61692 | 101558 | 41.9 |
| 2003 | 594.26 | 741.51 | 1335.77 | 57219 | 75193 | 132412 | 50.5 |
| 2004 | 735.14 | 943.72 | 1678.86 | 73818 | 94227 | 168045 | 54.5 |
| 2005 | 839.92 | 1004.52 | 1844.44 | 80340 | 109105 | 189445 | 65.3 |
| 2006 | 916.39 | 1157.17 | 2073.56 | 92852 | 118516 | 211368 | 46.0 |
| 2007 | 1020.71 | 1339.51 | 2360.22 | 109060 | 127643 | 236703 | 35.9 |
| 2008 | 1161.3 | 1506.5 | 2667.8 | 124035 | 142337 | 266372 | 36.5 |
| 2009 | 979.1 | 1309.4 | 2288.5 | 109630 | 122545 | 232175 | 41.1 |
| 2010 | 1210.6 | 1767.1 | 2977.7 | 149086 | 152801 | 301887 | 42.4 |
| 2011 | 1483 | 1945.9 | 3428.9 | 161467 | 183487 | 344954 | 63.5 |
| 2012 | 1516.4 | 1778.1 | 3294.5 | 144686 | 189019 | 333705 | 73.8 |
| 2013 | 1502.8 | 1622.7 | 3125.5 | 129883 | 182112 | 311995 | 70.6 |
| 2014 | 1494.42 | 1629.96 | 3124.38 | 162686 | 180996 | 343682 | 43.3 |

**Table 1 China-Japan Bilateral Trade Ties**

Sources: The statistics on China's trade with Japan are from *China Customs Statistical Yearbook* ; those on Japanese trade with China are from Japan's *Trade Statistics* from the Japan External Trade Organization; and those on Japan's FDI in China are from the *China Commerce Yearbook*.

The relevant literature shows that the East Asian production network establishes its triangle trade with China as the export platform, through which China develops into the most globally important export country for mechanical and electrical products. Using the UN's COMTRADE database (2002-2014), this paper selects six mechanical and electrical industries as subjects of study. The six industries are: general equipment manufacturing; special equipment manufacturing; transport equipment manufacturing; electrical power and equipment; machinery and apparatus manufacturing; communication equipment; computers and other electronic equipment manufacturing; and instruments, apparatuses, culture equipment and stationery. Based on the preliminary industrial classification, the paper borrows classification methods and procedures from Kimura & Obashi (2010) to categorize mechanical and electrical components and parts, in order to differentiate between intermediate products and end products.

The most evident characteristic of the triangle trade is the processing of imported components and parts into end products, which are then exported back. China's mechanical and electrical industry is relatively reliant on Japanese components and parts. The Chinese imports of Japanese mechanical and electrical components and parts climbed to USD 5.58 billion in 2014 from USD 1.6 billion in 2002 (refer to Graph 1). The first inflection point appeared in 2008, before which the import volume was only rising incrementally. The second inflection point happened in 2009, and the third one appeared in 2010 when the import volume reached its peak value of USD 7.85 billion, before going back down for a number of years until 2014, when it recovered again. On the whole, China's import of Japanese mechanical and electrical components and parts tremendously fluctuated owing to the financial crisis, the China-Japan territorial dispute, and earthquake in Japan. China's import of Japan's mechanical and electrical components and parts reflects the trends in the two countries' trade.




**Graph 1. The import volume of China's import of Japan's mechanical and electrical components and parts and intermediate goods between 2002 and 2014**
Sources: Author's calculation based on UN COMTRADE Database.

In accordance with Hadder (2007), the triangle trade index is constructed as follows:

***Model 1***

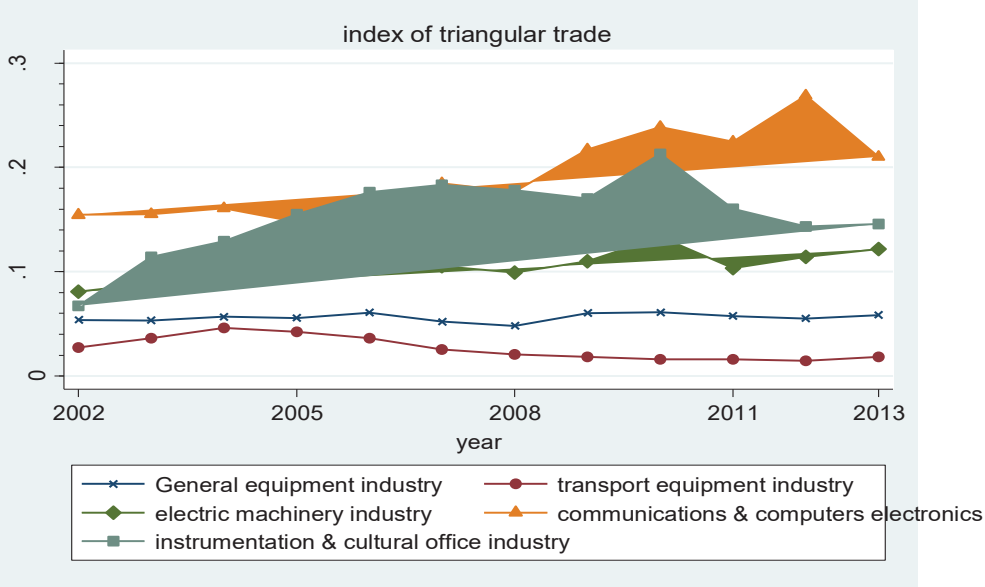
$$TRI = A * B$$

$$\text{Where } A = \frac{Volume\ of\ Japan's\ Export\ of\ Intermediate\ Products_i\ to\ China}{Total\ Volume\ of\ Japan's\ Export\ of\ Intermediate\ Products_i}$$

$$B = \frac{Volume\ of\ China's\ Export\ of\ End\ Products_j\ to\ US\ and\ EU}{Total\ Volume\ of\ China's\ Export\ of\ End\ Products_j}$$

Based on the above-mentioned criteria, industrial classifications and research targets, this paper calculates the triangle trade indexes of mechanical and electrical sectors (see Graph 2). The

indexes of China's mechanical and electrical industrial integration into the Japan-centered triangle trade differs among various industries. The highest-ranked triangle trade indexes include such industries as communications equipment, computers, and other electronic equipment manufacturing, as well as the manufacturing of instruments, apparatuses, culture equipment, and stationery. Their indexes reached 0.125 and 0.086 respectively in 2014. The lowest ranked industries include transport equipment manufacturing and general equipment manufacturing, respectively reaching 0.0259 and 0.006 in 2014. From this can be drawn that the Chinese mechanical and electrical industry is deeply integrated in the Japan-centered production network. As far as the changing trend is concerned, communications equipment, computers, and other electronic equipment manufacturing industries achieved their greatest percentage in growth at 186.2% between 2002 and 2014. This demonstrates the rapid pace at which China integrated itself into the triangle trade of the East Asian production network with Japan at its core.




**Graph 2. The indexes of China's integration into Japan-centered triangle trade**
Sources: Author's calculation based on UN COMTRADE Database.

This paper employs the level of an export's technological sophistication to gauge export quality. The PRODY index was constructed to measure the level of technological sophistication of export products (Hausmann et al, 2007).

***Model 2***

$$PRODY_i = \sum_j \frac{(x_{ji}/X_j)}{\sum_j (x_{ji}/X_j)} Y_j = \sum_j \frac{RCA_{ji}}{\sum_j RCA_{ji}} Y_j$$

$PRODY_i$ stands for the technological sophistication of the product i; i stand for a certain product i and j an exporting country j; $x_{ji}$ stands for the export volume of the product i of the country j; $X_j$ stands for the total export volume of the country j; $Y_j$ stands for the per capita income of the country j. The technological sophistication of the exports of a country's industry can be calculated as follows:

***Model 3***

$$EXPY_j = \sum_i \frac{x_{ij}}{\sum x_{ij}} PRODY_i$$

$EXPY_j$ means the technological sophistication of the exports of the country j. The HS 6-digit (2002) classification scheme trade data of 142 countries between 2002 and 2014 is used. Raw data for per capita income are drawn from the World Development Indicators database.

**Model Construction and Data Processing**

A large amount of existing research shows that the export quality of China's manufacturing industry has improved through its participation in the labor division of global value chains, while China's integration into the East Asian production network is an important vehicle for its participation in the labor division of the global value chains. Additionally, through international trade, technological progress in new materials, intermediate products, capital equipment, etc. are acquired by other importing countries, paving a crucial path for technology spillover. How does China's participation in the East Asian production network impact the export quality of China's mechanical and electrical products? Based on existing literature and the above-mentioned statistical results, the following hypotheses are proposed.

**Hypothesis 1:** China's participation in the East Asian production network with Japan at the center has a positive influence on the export quality of China's mechanical and electrical products.

**Hypothesis 2:** If Hypothesis 1 holds, China-Japan ties will impact China's participation in the East Asian production network and consequently its export quality. Therefore, China-Japan ties will

have a negative influence on its export quality.

Using the panel data of the mechanical and electrical industries between 2001 and 2014, this paper takes export quality as the explained variable and the degree of China's participation in the triangle trade of the Japan-centered global production network as the explanatory variable to construct an econometric model and empirically analyze the influence of China's participation in the triangle trade of the East Asian production network on China's export quality. Based on relevant theories and existing research conclusions, domestic endowment and the research and development (R&D) level are chosen as the control variables, and the empirical model is constructed as follows:

***Model 4***

$$\exp y_{it} = \alpha_0 + \alpha_1 tri_t + \alpha_2 kp_t + \alpha_3 lab_t + \alpha_4 rd_t + \varepsilon_t \quad (4)$$

$\exp y$ the explained variable, is the logarithm of the technological sophistication level of mechanical and electrical sectors' exports of final products. $tri$, the explanatory variable, is the triangle trade exponent of the degree of China's participation in the Japan-centered global production network. As control variables, $kp$ stands for material capital endowment, $lab$ for labor force endowment, and $rd$ for the R&D level. The raw data come from sources including the *China Industry Economy Statistical Yearbook*, the *Chinese Labour Statistical Yearbook*, and the *China Statistical Yearbook on Science and Technology*.

According to measurement results on components and parts trades in the mechanical and electrical industries, Chinese import of components, parts, and semi-finished products with Japanese origins decreased markedly after 2010. The decline can be attributed to the worsening of China-Japan relations. Do China-Japan relations impact China's export quality? Considering China-Japan relations suffered significantly due to the territorial dispute, this thesis introduces a dummy variable in Model 4 to represent China-Japan relations. For the years before 2010, the dummy variable *dum* equals 0. For the years after 2010, *dum* equals 1. The empirical model is constructed as follows:

$$\exp y_{it} = \beta_0 + \beta_1 dum_t + \beta_3 kp_t + \beta_4 lab_t + \beta_5 rd_t + \varepsilon_t \quad (5)$$

**The Analysis of the Empirical Results**

Through a stationary test and co-integration test, Hausman chose the fixed effect (FE) model. This is followed by collinearity tests, tests for heteroscedasticity, and tests for serial correlations and cross-sectional correlation. More attention should be given to relevant serial correlation and cross-sectional dependence issues when the panel data are smaller than N but bigger than T. Therefore, the xtscc command is chosen for the regression. The results are shown in the first column FE of Table 2. The second column of Table 2 shows the regression results of Model 5.

| | （1）FE | （2） contain dum |
|---|---|---|
| dum | | -1.481<br>（.9723） |
| tri | 2.694*** <br>（.5074） | 1.647* <br>（.6832） |
| kp | .11576<br>(.0995) | .1871* <br>（.0827） |
| lab | .79457*** <br>（.2136) | .4227* <br>（2041） |
| rd | .1247*** <br>(.03483) | .2339<br>（.1538） |
| year | Y | - |
| Con | 7.0005*** <br>(.7849) | 6.529*** <br>（.7984） |
| $R^2$ | 0.34 | 0.363 |
| F | 43.54 | 40.22 |

**Table 2. The regression results of the impact of Japan-centered triangle trade on export quality**

Note: ***, ** and * mean 1%, 5%, and10% respectively.

The regression results of FE indicate that a significant positive correlation between the triangle trade and the technological sophistication of Chinese mechanical and electrical exports exists. In other words, the deepening of China's integration and participation in the Japan-centered

East Asian production network is conducive for enhancing the quality of China's mechanical and electrical exports. China's integration in the Japan-centered East Asian production network plays a positive role in improving China's export quality. It would bear great significance for China to strengthen its integration into the Japan-centered triangle trade, so that Chinese mechanical and electrical export quality is improved and Chinese trade improved. The controlled-variable regression results under two regression methods show that capital intensity, labor force endowment, and the R&D level all have a positive correlation for export technological sophistication. Under two regression models, labor force endowment and the R&D level all showed positive coefficient and impact for export sophistication with significance. The significance of the controlled variable is consistent with theoretical expectations.

As far as the regression results of Model 5 is concerned, if the coefficient $\beta_1$ of the dummy variable is significant, it suggests that China-Japan relations do have an effect on China's export quality. The regression coefficient is negative, but insignificant. Negativity suggests that worsening China-Japan relations are not conducive to improving China's export quality. The insignificance may be attributed to the sampling timespan of 2002 to 2014, which differs from the worsening of China-Japan relations which started from 2010. The sample T is too short, rendering regression results insignificant. Moreover, just as the regression results of Models 4 and 5 show, the triangle trade exponent has a positive and significant impact on the technological sophistication of Chinese mechanical and electrical exports, which indicates that the conclusion is stable. The control variable and signs are consistent with the regression results from Model 4.

Currently, the territorial dispute has a negative impact on the trade relations between China and Japan. In accordance with the empirical results from this paper, China should continue to strengthen its integration into the Japan-centered triangle trade, and actively participate in the East Asian production network to improve China's export quality. In addition, although China-Japan ties have a negative impact on China's export quality, the influence is not significant.

**Main Conclusions**

Tension in China-Japan relations erupted in 2010 due to Japan's detainment of Chinese fishing boats and worsened in 2012 due to Japan's purchase of China's Diaoyu Islands, harming bilateral trade relations. This paper empirically demonstrated a positive improvement to the quality of

China's mechanical and electrical exports because of Chinese participation in the East Asian production network with Japan at its core. This means that the triangle trade model enhances the export quality of Chinese mechanical and electrical products. Sino-Japan relations have a bearing on Chinese export quality, and thus China should continue to strengthen its integration into the Japan-centered triangle trade. Infusion into the East Asian production network is the most crucial way for China to participation in the division of the global value chain. Through triangular trade in the network, both China and Japan would reap their own profits. Both China and Japan should pay attention to the mutual economic gains and enhance their cooperation, allowing mutually beneficial and advantageous relations.

This thesis is limited to a certain degree. Since Sino-Japan relations worsened in 2010, the timespan T of the empirical model is so short that it renders insignificant the index for China-Japan relations and Chinese export quality. Hence, this thesis may be further improved upon in future by increasing timespan T for further analysis of the impact between the variables.

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# An Elite Experiment: How the Brazilian Ruling Class Sees China

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**Abstract:** This paper focuses on Brazilians' perceptions of China. Its central argument is that Brazilians' general perception of China can be well described as conflicting. It also argues that democracy and access to information are the issues that damage China's image the most, while the BRICS, culture, sports, and education are the topics that benefit China in the way it is seen in Brazilians' eyes. The work is divided into two parts. First, it explains the methodological tools used to develop and treat data tracked by this original survey of Brazilians' perceptions of China. Second, it presents the empirical findings gathered from the survey. In this section, the paper shows indexes related to twenty-two topics, eleven issues, and an index for the aggregate Brazilian perception of China. In addition to its empirical findings, this study claims its relevance based on its methodological process to turn qualitative measures into a quantitative index, and then turn it back into newly elaborated qualitative standards.

**Keywords:** China, perception, Brazil, environment, democracy, trade

## Introduction

This article focuses on Brazilians' views of China. To achieve an understanding of the perceptions Brazilians have of the country's main commercial partner, the analysis was divided into three parts. Firstly, before going into its central argument – that Brazilian's general perceptions of China is conflicting – we will briefly discuss the concept of perception and its importance to the field of international relations.

Subsequently, the article will explain the methodological tools used to develop and treat the data tracked. Then, it will present the empirical findings gathered from the survey on Brazilians'

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perceptions of China. In this section, the paper shows indexes related to twenty-two topics, eleven issues, and an index for the aggregate Brazilian perception of China. In addition to its findings, this study claims its relevance based on its methodological process to turn qualitative measures into a quantitative index, and then turn it back into newly elaborated qualitative standards.

The main focus of this research paper is to understand how Brazilians seated in key positions at key offices of Brazil's private and public sectors see China, regarding eleven issues. The survey was sent electronically to 112 high representatives of the main segments of the government, civil society, third sector, and political parties. The response rate was 40%, as forty-four participants answered the questions during the first semester of 2017. It is important to emphasize the high institutional representativeness of the sample, involving respondents that occupy critical positions in a wide array of Brazil's key political inclinations and interest groups.

Amongst the respondents were high up representatives of civil society and business groups, such as the Federations of Industries of the states of Rio Grande do Sul and Santa Catarina. Answers were also received from the top layer of national government agencies, such as the Ministry of Planning and the Ministry of Social and Agrarian Development.

Several high up governmental representatives also answered the statements, such as those from the International Relations of the Research Institute (IPRI-FUNAG), the Brazilian Space Agency, the National Agency of Waterway Transportation, the Ministry of Defense, the Ministry of Tourism, and the Ministry of Foreign Relations, amongst others. Moreover, the survey gathered the perceptions of representatives of non-governmental organizations and civil society, such as "Instituto Socioambiental", "Instituto Ayrton Senna", Foundation "Educar DPaschoal", and the Presbyterian Church.

**A Novel Methodological Approach: Pairs of Related but Opposing Statements**

A perception can be considered the image of the world a decision-maker has at a given time (Vertzberger, 1990), and it is related to one's cognition. Cognition influences many studies in foreign policy decisions (Levy, 2013; Mintz & DeRouen, 2010; McDermott, 2004; Mintz 2004; Jervis, 2002; Vertzberger, 1990; Jervis, 1976). The turning point in the development of a cognitive

paradigm for international politics came with Jervis' (1976) pivotal study of perceptions and misperceptions in foreign policy (Levy, 2013).

Jervis assessed the theoretical and experimental evidence from many areas of psychology. He focused on areas that directly affect discussions concerning perception and misperception in international relations. Jervis contributed significantly to the recent enthusiasm towards psychological approaches in international relations. A central premise of the cognitive paradigm revolves around the complexity, incoherence, and inconstancy of the ever-changing world. Thus, people have limited capacities to make accurate depictions of reality, processing information that is far from the ideal standards of rationality.

Therefore, cognitive predispositions or mindsets would play a disproportionate role in shaping a person's perceptions. This paradigm argues that there is a tendency for people to see what they expect to see based on their prior beliefs and worldviews, despite reality. This scenario leads to the persistence of beliefs over reason. In other words, perception is more theory-driven than data-driven (Jervis, 1976). Many international relations scholars who have applied social psychology to their field have followed Jervis' line of thought (Levy, 2013).

The dragon was a symbol of imperial power during the Han dynasty. Currently, China is referred to by Western scholars as a dragon, due to its strength, although the Chinese mythological creature has little to do with the hostile animal sometimes portrayed in the West (Deng & Wang, 1999). On the contrary, the Chinese dragon is a spiritual and cultural icon which represents prosperity. On the other hand, Brazil's association with the small canary (*canarinho* in Portuguese) was first related to its national soccer-team yellow jersey. Since avoiding discord and disharmony, as well motivating other countries to cooperate, stands as a central facet of Brazil's diplomatic tradition (Burges, 2017; Centracchio, 2016), we use the image of this friendly and benevolent bird to refer to Brazil. The imaginary of such distinct creatures – and countries – makes one wonder: how the canary would see the dragon?

This article presents a methodological tool which consists of a survey procedure named *pairs of related but opposing statements* (PROS). It potentially implies a refinement of the way surveys' data are both collected and examined, and it therefore helps to overcome certain criticisms about

surveys' scientific validity.

In short, regarding how data are gathered, it does not use a single and independent question as its unit for data collection, but rather a set of two questions that, although related to the same selected topic, are based on statements (to be judged by respondents) that are opposing in their meanings. Regarding how data are analyzed, answers are not computed individually either, but instead they will computed in pairs. This procedure aims to double-check respondents' answers to the first question of the pair via their answer to the second one.

Since the two questions of each pair hold opposite meanings, the answers given to them by the respondent are expected to be opposite as well. To obtain more robust data on respondents' perceptions of a particular topic, investigators must first add together the two algorisms which represent the answers given by the respondent. The PROS survey model aims to work as a technique that enables data to have a more balanced relationship between the respondent's original perception and the answers he/she gives in the survey's questionnaire. It is also expected to be a mechanism to ensure a more unbiased approach, since investigators - independent of their own positive or negative view of a certain topic – are required to build up the questionnaire's structures with both positive and negative statements to be judged by the respondents.

Hence, the study uses a conventional approach (i.e. a survey), but with some novel procedures. The survey is actually part of a seven-step analytical framework. First, it selects the key issues related to the subject under investigation, in this case, regarding the Brazilian perception of China. As for this study, the issues selected were the BRICS (an association comprised of Brazil, Russia, India, China, and South Africa), economy and trade, democracy, the environment, multilateral relations, domestic politics, access to information, education, culture, sport and, last but not least, religion. These key issues work as intervening variables which distinguish between the nuances and proprieties of Brazilian perception.

Second, it develops the survey's questionnaire according to the novel PROS model. Therefore, the first question (i.e. the *A Type question)* of each pair always asks the respondent to judge a positive statement about China, while the second question (i.e. the *B Type question*) of the

pair always points out a negative statement on the same topic. For instance, supposing that the *A Type* question's statement is 'China is today's world leader in investments in greenhouse gas reduction', the *B Type* question could be 'China has increased its relative contribution to degrading the stratosphere'. Table 1 shows the selected key issues as well their respective pair of related but opposing statements.

| Key Issue | Respective PROS (Type A Question and Type B Questions) |
|---|---|
| **BRICS** | *A.* The BRICS are an important incentive for Brazilian development.<br>*B.* China does not give real importance to neither the BRICS nor to Brazil. |
| **Economy & Trade** | *A.* The Chinese government conducts fair and transparent trade negotiations.<br>*B.* The Chinese manufacturing industry is a threat to jobs in Brazil. |
| **Democracy** | *A.* China's political regime is suitable for a country with a vast territory and population.<br>*B.* China should be condemned for not being a democratic regime. |
| **The Environment** | *A.* China is a leader in investments in greenhouse gas reduction.<br>*B.* China degrades the environment. |
| **Human Rights** | *A.* The Chinese government respects international human rights law.<br>*B.* Chinese economic power is based on inhumane conditions imposed on workers. |
| **Multilateral Relations** | *A.* China represents the interests of the Global South in the international system.<br>*B.* Chinese relations with the United States are more important to China than Chinese alliances with the developing world. |
| **Domestic Politics** | *A.* China's political system promotes the common good of Chinese society.<br>*B.* China has high levels of corruption, impunity, and illegal political practices. |
| **Information Access** | *A.* The internet control carried out by the Chinese government has positive elements.<br>*B.* There is no freedom of press in China. Restrictions on access to information are harmful to the Chinese population. |
| **Education** | *A.* Chinese educational system is better than the Brazilian one.<br>*B.* There is excessive repression in the Chinese educational system. |
| **Culture & Sports** | *A.* Chinese traditional wisdom should be further explored by Brazil.<br>*B.* China does not have much to contribute to Brazil in terms of culture and sport. |
| **Religion** | *A.* Chinese religions are elements of convergence with Brazil.<br>*B.* Buddhism and Confucianism are rivals of the Brazilian Christian culture. |

**Table 1. The PROS's Key Issues**

Starting the stage of the examination of the data, the third step consists of turning perceptions into numbers. Respondents' qualitative answers are transformed into rationally valid corresponding quantitative data, as shown in Table 2.

| Respondents' qualitative array of answers | Corresponding arithmetical data |
|---|---|
| a. I completely agree | 2 |
| b. I agree | 1 |
| c. I have no opinion on it | 0 |
| d. I disagree | -1 |
| e. I completely disagree | -2 |

**Table 2. Turning perception into numbers**

Since the second question of each pair (the *B Type* question) holds a negative statement, any answer given to it will be computed in its inverse value. This is necessary, due the model's assumption that someone's disagreement with a negative announcement reflects their positive perception of the subject to the same extent that someone's agreement with a negative announcement reflects their negative perception about it.

To operate the model's assumption properly, any results for the *A Type* questions will be multiplied for *-1*. For instance, if the respondent's answer to a negative statement is "e" (I completely disagree), which corresponds to *-2,* it will be multiplied by *-1,* getting *2* as the product of the equation. Similarly, the *-1 multiplier factor* will be applied to the entire array of possible answers.

Fourth, the model reverses, now turning the numbers back into perceptions again, according to the array of arithmetical potential results and their corresponding qualitative measures, as shown in Table 3.

| Arithmetical results | Corresponding perceptions |
|---|---|
| 2 | Highly positive |
| 1 | Positive |
| 0 | Null (has no impact on their general view) |
| -1 | Negative |
| -2 | Highly negative |

**Table 3. Turning numbers back into perceptions**

Fifth, the model tracks the final index, which portrays the aggregate of all respondents'

perceptions on all issues (the ∑ index). Table 4 shows the formulas used to calculate both *I* index and the ∑ index.

| **Index** | **Specific Goal (To track the :)** | **Formula** |
|---|---|---|
| *I* | Perception of a particular topic | $I = \frac{AQ + BQ}{2}$<br>In which:<br>AQ = Result for Type A question<br>*BQ* = Result for Type B question<br>*2* = Number of questions |
| ∑ | Aggregate of all respondents' perceptions of all issues | $\sum = \frac{I1 + OI}{NI}$<br>In which:<br>I1 = Result for issue 1<br>OI = Other issues' results<br>NI = Number of issues |

**Table 4. Indexes and their formulas**

Lastly, it places the ∑ *index* on a continuum in which ∑ Index=*2* is in one of the extreme points (comprising the most positive perception of China) while ∑ *Index= -2* is at the opposing extreme point (encompassing the most negative perception of China). The ∑ *index* position in the continuum can be placed into one of nine perception zones: two positive ones, one neutral, two negative ones, and four zones of transition (Figure 1).

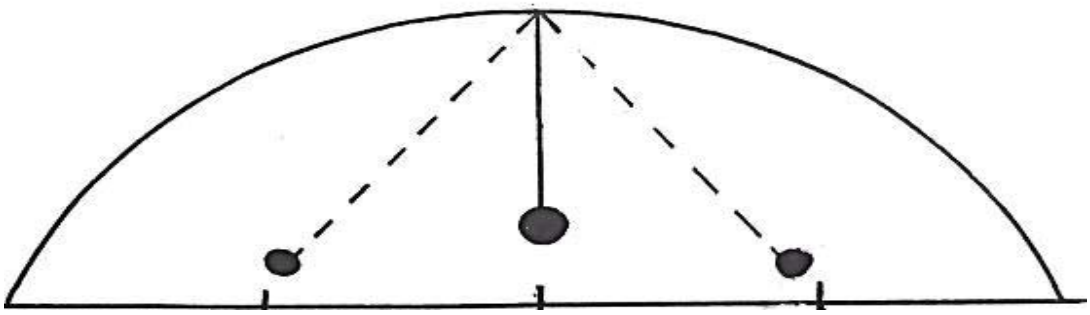


**Figure 1**

| Index | Perception |
|---|---|
| 1.6 to 2 | Highly positive |
| 1.5 | Transition zone A (between highly positive and positive) |
| 0.6 to 1.4 | Positive |
| 0.5 | Transition zone B (between positive and null) |
| -0.4 to 0.4 | Neutral (no impact on the issue/aggregate) |
| -0.5 | Transition zone C (between null and negative) |
| -1.6 to -0.4 | Negative |
| 1.5 | Transition zone D (between negative and strongly negative) |
| -1.6 to -2 | Strongly negative |

**Table 5. The Perception Pendulum**

## Analysis of the Empirical Findings

| **Results for Type A Questions (Positive Statements)** | | |
|---|---|---|
| **BRICS** | The BRICS are an important incentive for Brazilian development. | 0.83 |
| **Economy & Trade** | The Chinese government conducts fair and transparent trade negotiations. | -0.60 |
| **Democracy** | China's political regime is suitable for a country with a vast territory and population. | -1.00 |
| **The Environment** | China is a leader in investments in greenhouse gas reduction. | 1.00 |
| **Human Rights** | The Chinese government respects international Human Rights law. | -0.60 |
| **Multilateral Relations** | China represents the interests of the Global South in the international system. | 0.43 |
| **Domestic Politics** | China's political system promotes the common good of Chinese society. | 0.80 |
| **Information Access** | The internet control carried out by the Chinese government has positive elements. | -2.00 |
| **Education** | The Chinese educational system is better than the Brazilian one. | 1.00 |
| **Culture & Sports** | Chinese traditional wisdom should be further explored by Brazil. | 1.50 |
| **Religion** | Chinese religions are elements of convergence with Brazil. | 1.00 |

**Table 6. Type A questions' results (positive statements) by topic**

| **Results for Type *B* Questions (Negative Statements)** | | |
|---|---|---|
| **BRICS** | China does not give real importance either to the BRICS or to Brazil. | 0.67 |
| **Economy & Trade** | Chinese industry is a threat to jobs in Brazil. | 1.00 |
| **Democracy** | China should be condemned for not being democratic. | -1.00 |
| **The Environment** | China degrades the environment. | -1.67 |
| **Human Rights** | Chinese economic power is based on inhumane conditions imposed on workers. | -0.40 |
| **Multilateral Relations** | Chinese relations with the United States are more important to China than Chinese alliances with the developing world. | -0.71 |
| **Domestic Politics** | China has high levels of corruption, impunity, and illegal political practices. | -0.60 |
| **Information Access** | There is no freedom of press in China. Restrictions in access to information are harmful to the Chinese population. | -1.00 |
| **Education** | There is excessive repression in the Chinese educational system. | 0.00 |
| **Culture & Sports** | China does not have much to contribute to Brazil in terms of culture and sport. | -0.50 |
| **Religion** | Buddhism and Confucianism are rivals of the Brazilian Christian culture. | 1.00 |

**Table 7. Type B questions' results (positive statements) by topic**

According to the survey, there is a positive view on the **BRICS**. When it comes to its role in Brazil's economic development, the 0.83 result for the Type A question (Table 6) indicates a supportive perception. This is confirmed by the 0.67 result for the Type B question (Table 7) generated by the answers to the question on the importance China gives to the BRICS as whole and to Brazil in particular. Therefore, Brazilians endorse China and the BRICS as necessary partnerships for boosting Brazil's economic growth.

In relation to the topic **economy and trade**, the survey concluded that Brazilians have a negative perception of China's commercial endeavors. The -0,60 result for the Type A question (Table 6) shows that Brazilians tend to mistrust China's negotiations on trade, deeming them not as fair and transparent as Beijing states. However, Brazilians do not believe that Chinese companies are direct competitors of Brazilian companies. The 1.00 result for the Type B question (Table 7) indicates that Brazilians have a positive perception of Chinese industries, while analyzing its impact on jobs in Brazil.

According to the Perception Index on **democracy**, Brazilians' view as a whole is negative. The -1.00 result for the Type A question represents that Brazilians do not consider that the Chinese

political regime would be a more suitable one for the country. In addition, the second -1.00 result for the Type B question negative view indicates that China should be internationally condemned for conducting a non-democratic political regime. The overall perception shows that a democratic regime matters. Therefore, as the Chinese regime is not considered democratic by the Brazilian people, they are concerned about it.

On **environmental** issues, the Brazilian perception about China is positive (result 1.00) when it comes to Chinese investments deployed to curb greenhouse gas emissions (Table 6). Nonetheless, the perception is negative regarding China's relation with environment deterioration. The -1.67 (Table 7) result suggests that Brazilians have a strongly negative perception about this issue. Brazilians see China as one of the world leaders in environmental deterioration.

In respect to **human rights**, Brazilians have one negative and one null perception on this topic. First of all, the -0.60 (Table 6) result showcases that Brazilians perceive China as a recurrent violator of human rights rules internationally. Besides that, the -0.40 (Table 7) survey result states that Brazilians do not have a fixed opinion when it comes to work conditions in China.

The topic on **multilateral relations** brings a negative and a null perception about China. Firstly, the null perception 0.43 (Table 6) about China's representativeness of Global South's interests means that Brazilians have no consolidated opinion on this issue yet. Nonetheless, the second question is negatively perceived (-0.71), as seen in Table 7. According to Brazilians' perceptions, China considers its bilateral relations with the United States to be more relevant than ones it establishes with countries in the developing world.

Regarding this part of the survey, there is a mixed view of Chinese domestic politics. When it comes to the role of China's political system in promoting the common good of Chinese society, the 0.80 (Table 6) result denotes a supportive perception, though this is contradicted by the reactions to the affirmative on its levels of corruption, impunity, and illegal political practices. The -0.60 (Table 7) result indicates that interviewees partially agreed with this negative perception.

In relation to access to information, the survey suggests that there is a predominantly

negative view. The -2.00 (Table 6) result shows that examinees strongly disagreed with the assertion that the internet control carried out by the Chinese government has positive elements. In addition, the -1.00 (Table 7) result reveals that individuals partially agreed that there is no freedom of the press in China and that restrictions to information are harmful to society.

The perception about Chinese education falls into a transition zone between null and positive. The 1.00 (Table 6) result suggests there is a positive perception of the Chinese educational system, which is considered to be better than the Brazilian one. The survey indicates that there is not a clear opinion on whether the repression in the Chinese educational system is excessive, since the result is null (0.00), according to Table 7.

In what concerns culture and sports, the results were contradictory. On the one hand, the 1.5 (Table 6) result implies that interviewees have a positive perception of Chinese traditional wisdom, which they considered should be further explored by Brazil. On the other hand, the 0.5 (Table 7) result means that the perception of the contribution that China could give to Brazil in terms of culture and sports is in a transition zone from null to negative.

| | |
|---|---|
| **BRICS** | 0.75 |
| **Economy & Trade** | 0.20 |
| **Democracy** | -1.00 |
| **The Environment** | -0.33 |
| **Human Rights** | -0.50 |
| **Multilateral Relations** | -0.14 |
| **Domestic Politics** | 0.10 |
| **Information Access** | -1.50 |
| **Education** | 0.50 |
| **Culture & Sports** | 0.50 |
| **Religion** | 1.00 |

**Table 8. I Perception Index**

Finally, the survey showed there is a positive perception in regard to religion. The 1.00

(Table 6) result indicates a supportive perception of Chinese religions as elements of convergence with Brazil. Similarly, the 1.00 (Table 7) result reveals that Buddhism and Confucianism are not seen as rivals of the Brazilian Christian culture.

According the *I* Perception Index, Brazilians' perceptions of China are positive on the BRICS, religion, education, and culture and sports. However, they are negative on democracy, human rights, the environment, and access to information. On issues such as domestic politics, economy and trade, and multilateral relations, Brazilians' perceptions of China are still null or are almost null. As was said before, a null result does not imply the absence of any view on the issue, but it does indicate the presence of at least two conflicting points of view on the same subject.

**The Aggregated Perception (∑ Index)**

The Aggregated Perception (∑ Perception) Index is 0.04, which refers to the conflicting perception category. It indicates the non-prevalence of either an absolutely positive image or an absolutely negative image about China.

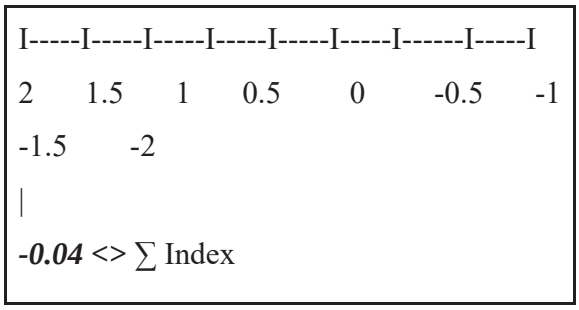


**Figure 2. The Aggregate Perception Index (∑ Index)**

This non-prevalence means an unstable situation, in which the aggregate perception could either remain in this state, or could easily and unexpectedly to shift into either a positive or negative position. It seems reasonable to state that policy makers and businessmen are better served in their goals and purposes if aware of the shifting and unstable nature of a concrete situation encompassed by any ∑ Perception Index between -0.4 and 0.4.

**Conclusion**

The survey was conducted on Brazilians' perception of China during the first semester of 2017. It is relevant to mention that the results do not showcase either the Brazilian population's view or the official opinion of the organizations mentioned in the paper. Rather, it displays the perception about China of respondents seated in key positions at key offices in Brazil's private and public sectors. The strong qualitative nature of the sample ensures the distinctiveness of the research and the reliability of the results.

The *results for Type A questions (positive statements)* show that the environment and access to information were the main topics with negative rates. This highlights that Brazilians are aware of the struggles China is having with regards to those issues. As far as access to information is concerned, the majority of the survey's participants perceived China as a non-democratic country which restricts some internet contents to its population. Moreover, the way China deals with the press is one of the main concerns of Brazilian citizens. In relation to the environment, a topic that has drawn Brazilians' attention in the last few years is environmental degradation. Since both the media and researchers indicate that China is one of the world's largest gas-emitter due to its rapidly growing economy, Brazilians raise concerns about how pollutants' emissions can affect the environment as a whole.

However, *question Type B results* also display that the environment, education, and culture and sports have the highest positive rates. It is interesting to note that, although participants see China as one of the main environmental polluters, they also are aware of all investments China makes in renewable energy. China's efforts in this matter are well-known by various segments of government, civil society, third sector, and political parties. Education and culture and sports are other topics that were high-rated by participants, due to the positive perception Brazilians have of these items. For Brazilians, China represents a country committed to providing high quality education and high performance in sports. Brazilians know they have a lot to learn from China in those issues.

Different from the findings from the *results of the questions*, the *I* index indicates that the BRICS and religion received better rates as a whole. Participants see the BRICS as a relevant

coalition for the developing world, and believe that Brazil can gain considerable ground in the partnership. Moreover, Brazilians in general have a positive perception of China's engagement with the BRICS. Regarding religion, participants did not perceive China's religions as Christianity's rival. On the contrary, Brazilian understand that Buddhism and Confucianism, for example, can be an element of convergence with Brazil, as more and more Brazilians have declared themselves followers of Eastern religions in recent times.

With regard to negative rates, the survey findings indicate that questions of both Type A and B have similar results. Access to information and democracy received the worst rates in the index, which confirms what was said before: Brazilians perceive China as a non-democratic country which restricts communication channels. This result shows that the democratic system is a pivotal tenet for participants. Recent historical events make Brazilians in general more inclined to defend democratic values.

In general, democracy and access to information were the main issues which damaged China's image in Brazil. In contrast, the BRICS, culture, sports, and education were the issues that boosted China's image and drew Brazil's attentions. Therefore, according to the survey findings, Brazilians' overall perception of China is conflicting. This should come as no surprise, given the complexity and multidimensionality of China's presence in Brazilian society. In this sense, the fact that there are contradictory results is not a problem, but rather a sign of an interesting area that requires further research and explanation.

Another possible reason for the existence of conflicting notions regarding China can be found in Brazil's limited understanding of the Asian state. Few Brazilian nationals are sinologists, and even fewer have extensive experience in China or speak Chinese. Sadly, there is no sign that this is going to change any time soon, since there is no strategy or policy in force to foster broader interest in China, its language, reality, or culture. In contrast, Beijing invests heavily in the training of an elite group of analysts with a sophisticated understanding of Brazil - including precise goals on how many Chinese people should learn Portuguese. Thus, the fundamental nature of Brazil-China ties today is one of a deep asymmetry of knowledge: China knows a great deal about Brazil, while Brazil knows very little about China (Stuenkel, 2018).

That fact underlines the importance of this research project as a valid - and welcomed - effort to address this unevenness by understanding a phenomenon that remains largely unknown: how China is seen in Brazil, especially by those occupying critical positions in Brazil's governmental agencies, political parties, and interest groups. Overcoming this lack of knowledge is a necessary condition for Brazil to develop a proper strategy for dealing with China in a way that supports its national interests. In this sense, investment in academic research, including additional surveys, is a must.

Due to its limited scope and qualitative nature, this study focused on specific segments of Brazilian society, leaving the perception of other social groups unmapped. Thus, others can build on the results found by applying the survey in different niches - such as the working class and the population in general - to see whether this will lead to similar results. The information gathered would be a step in the direction of providing Brazil with needed insights to deal more wisely with its main Asian partner.

Besides addressing these issues, for future research, the survey method could be replicated spatially, temporally, and spatially-temporally. Spatial replication could be applied to other BRICS' countries to map the perception of China within their populations. This study would be relevant to understanding how tight the ties between China and the coalition are. On the other hand, temporal replication could be employed from the year 2017 onwards to follow up China's image throughout time. Finally, the survey modelling should be applied on a spatial-temporal basis, creating a historical series of the perception of China in other BRICS countries from 2017 onwards. The development of such research would be valuable to allow China to strengthen its image amongst some of its four main partners in the emerging world.

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