



THE PATH DEPENDENCE OF INDUSTRY STRUCTURE ADJUSTMENT IN CHONGQING: CENTRAL GOVERNMENT POLITICAL DECISION

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ABSTRACT

Reviewing Chongqing's industrial structure evolution in the history view angle since Chongqing was opened and quantitative analyzing with shift-share analysis and Structure effect index after the Reform and Openness, this paper explores the rise of political status of Chongqing that caused industrial structure adjustment all the time. By Structure-Conduct-Performance Model, we explain that the central government's political decision is one of the major reasons. Its influence presents a continuity spiral structure. Not only on the market development and technology progress, industry structure adjustment much depends on central government political decisions in Chongqing. Its starting points are national interest, orderly market competition and the people's livelihood economy. In doing so, we suggest that finding the equilibrium point between plan economy and market economy is very important in the process of industry structure adjustment and upgrade. That's maybe an exploration for centralized state upgrading the industry structure in other areas through the political position. In the exploring process, the possible contradictions and setbacks may provide more practice to China's reform and development.

Keywords: Central government's political decision, Industry structure, Path dependency, Equilibrium point

INTRODUCTION

Industrial structure adjustment is an important subject for all developing economies to improve its people's life and promotion of social development, (Behrooz and Mostafa, 2011). Except the first level factors, such as capital, labor force investment and technology progress, "the system" is the

second level potential factor for economic growth and economic development level, (Qian, 2003). The essential factors that economic growth theory stressed such as innovation, scale economy, education, and capital accumulation are not the reasons but the reflections, (Naiwei and Siting, 2012). "Institution" is a fundamental factor of the long-term economic performance. Because good institution not only can provide proper incentives to physical and human capital but also can promote the technological progress, (North and Thomas, 1973; North, 1990) Some developing country governments need to reduce the externalities of human capital learning, (Chi-Feng *et al.*, 2013). Institutional change is one of the measures, it connects institutional change with optimization choose, (Wang, 2006). From the of empirical and theoretical aspects, the fundamental reason of economic development maybe the economic institution, (Acemoglu *et al.*, 2004). In some transition countries, sustained economic development depends on institutional change and innovation, (Paul, 2004) (Utpal and Manoranjan, 2011).

Since the 1950's, Japan and South Korea governments formulate corresponding policies in the process of industrial structure adjustment to promote economic development and market demand. In the ninth and tenth five-year plan period, China used the experience of Japan and South Korea as a reference to ensure a strategic adjustment of industrial structure. Based on the Chinese characteristic socialism, economic development goals and market demands, the government led the industrial structure adjustment by making some mandatory instructions. China has been developing for 30 years through market economy development and private economy encouragement with Open Policy. However, China is a developing country with an imbalance between urban and rural areas. The Chongqing city is located in western China. It is one of the representatives of imbalanced developed cities in China. Enterprises followed its scientific and reasonable macroscopic guide to guidance can't remedy industrial structure development defect in Chongqing. Chongqing eagerly needs the central government leading policy innovation. Based on some leading policies, such as the western region development, urban and rural development, central government devoted its efforts to construct Chongqing being an economic center in the upper Yangtze River area. In order to ensure the development and to improve the livelihood of the people, Chongqing government has built Public Rental Housing and introduced reforms in household registration system to balance urban and rural development. They attracted coastal industrial transfer by vertical integration and pay attention to the development of the state-owned company. The government tried to pull Chongqing economy by state-owned economy, private economy and foreign investment to improve the livelihood of the people effectively. From the history view angle, this paper tries to analyze the different characteristics and existing problems of industrial structure evolution during the following three economy period: Wartime economy, National defense economy and the people's livelihood economy. Then we find out the similar and different path dependence foundation of industrial structure evolution in the above three periods. Lastly, we research the interactive relationship and possible contradiction between the people's livelihood economy and the market demand in the process of the industry structure adjustment and upgrade.

THE HISTORY OF INDUSTRIAL STRUCTURE EVOLUTION IN CHONGQING

In the end of nineteenth century, modern industry began to grow in Chongqing when Chongqing became an open port. Since that time, Chongqing has been commerce and trade center at the upper Yangtze River after Nationalist Party Government moved to Chongqing in 1937, large number of materials equipment, machine equipment and workers were transferred to Chongqing from north, east and central China. The transfer brought a revolutionary change in industrial layout in Chongqing. It brought the advanced management, experience and numerous technical workers for Chongqing. All this had been the foundation of Chongqing industrial categories and development framework. Before the World War II, industrial structure is constituted by light industry in Chongqing mainly. After the war, industrial structure quickly constituted by ordnance, machinery, steel, coal, textile, chemical, electrical appliances industry and so on as the main body of the industrial system. With the establishing of factories, the unprecedented development of wartime munitions and enterprises of civil using drove the series development and formed a complete industrial chain. Chongqing industry entered into the golden era in the war times and was dominated in the rear area economy. In 1944, Chongqing had really been the economic center of upper Yangtze River. However, because of focusing on the military industry in the war times, the central government paid little attention to the interactive connections between economic, social and industry. That caused the appearance of dual economic structure, which has a big gap between urban and rural areas. So the industrial structure entropy data increase quickly since the founding of PRC.

From 1958 to 1961, because of great leap forward movement and sacrificing agriculture policy, the country encountered national food shortages and famine. From 1966 to 1976, the Great Proletarian Cultural Revolution destroyed education, science and culture system seriously. At that time, the entire country was in chaos and economy developed abnormally. Although the disorder situation was contained gradually, the industry structure developed backward. Structure entropy value also began to drop. In 1960s', at the state political judgment, Chinese government put forward the policy of moving many coastal factories to "three line areas". Then the country started "Three line constructions". Because of Chongqing had a comprehensive old industrial base and its national industrial especially arms industry occupied an important position, the central government key constructed the city in 1973. The government planned to construct Chongqing into an arms industry base in 3 years. According to incomplete statistics, 30% "Transfer projects", numerous research institutes, more than 500,000 people including skilled technicians, outstanding scientists and engineers, management persons transferred to Chongqing from Beijing, Tianjin and Shanghai. The central government accumulated more than 50 hundred million RMB investments in Chongqing. Balanced the defense industry development in our country and lay the foundation for the second industry developed rapidly in Chongqing. Chongqing obtained the biggest development opportunity in "Three line construction" since 1890s, became one of the six major industrial cities

and the key area of "Three line construction" rapidly, which formed complete industrial production system. Chongqing owned great production capacity, which strengthened the economic center status in southwest region. However, the central government emphasized too much on the principles of concealment, scattered, self-contained and far from economic and cultural center city. The surrounding radiation function of "Three line construction" is restricted and the vulnerability of industrial structure gradually emerged. The industrial structure entropy value fluctuated, which exposed the vulnerability of industrial structure in this period. "Three line constructions" had counterproductive effects on the industrial structure at that time. In the long run, the rapid development of the industry and one-sided industrialization strategy hadn't promoted the development from dual economic structure to urban and rural integration, the extent of the dual economy was worse. The pattern of "Big city, Big countryside" had appeared completely in this period.

Chongqing industrial structure evolution gradually adjusted toward right direction after 1978. This is a reflection of policy adjustment and social economic changes in the industrial structure evolution. In 1984, the central government transferred part of powers of the economic management to Chongqing. After that, the proportion of the first industry reduced, the second industry grew in a small range, while third industry developed rapidly. In 2000, Chongqing directly came under the jurisdiction of central government. The third industry developed rapidly while the other two slowed down extremely. Under the leading government policy of Western China development, the pull role of the second industry on economic growth increased. In the open port period, World War II period and "Three line construction" period, an external force embedded mode push forward Chongqing economic development mainly. The political status rise in Chongqing history is benefited by a matter of national destiny decision. That has important significance in the western regions construction. The intension of economic center in upper Yangtze River and the venation of industrial structure upgrade under the government political decision reflect the national level strategic intention.

In consideration of data deficiency before 1949, the data is from "2-2 Composition of Gross Domestic Product (1949-2010)" of 《Chongqing Statistical Yearbook 2010》. This paper uses the three industries classification and the entropy of industrial structure to observe the industrial structure changes. Figure 1 is industrial structure evolution and Figure 2 is the entropy dynamic evolution value in Chongqing since 1949.

Fig.1. 1949—1979 industrial structure evolution in Chongqing.

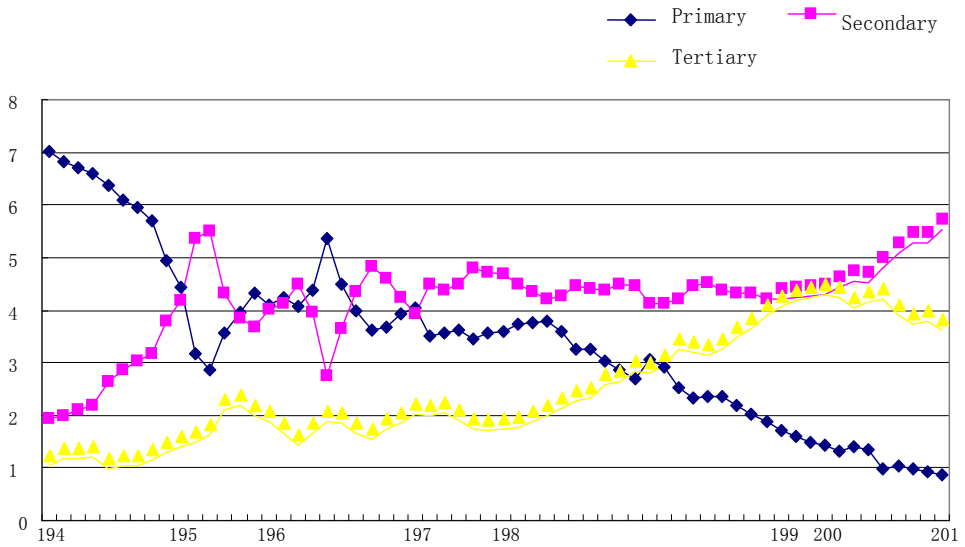
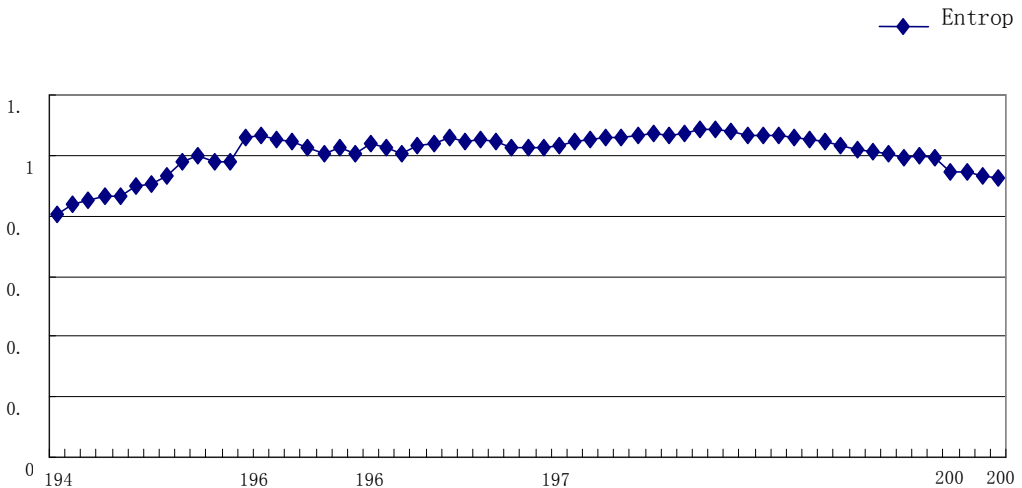


Fig.2. Entropy dynamic evolution value in 1949—2009.



The Degree of Industrial Structure Evolution in Chongqing

The National Growth Rate version of traditional, accounting-based shift-share partitions change in a regional economic indicator, such as employment, into components representing national share, N_i ; proportional shift, P_i , (an industry mix effect); and differential shift, D_i , (a local competitive effect):

$$G_i = N_i + P_i + D_i$$

where G_i is change in sector i in Chongqing. Each component is defined as follows:

$$P_i = \sum_{i=1}^3 (e_{i,t} - e'_i) \cdot R_i$$

$$D_i = \sum_{i=1}^3 e_{i,0} \cdot (r_i - R_i) ;$$

$$L = \frac{\sum_{i=1}^3 e_{i,t}}{\sum_{i=1}^3 e_{i,0}} \Bigg/ \frac{\sum_{i=1}^3 E_{i,t}}{\sum_{i=1}^3 E_{i,0}} = W \cdot u ;$$

$$V = r / R$$

E is the Gross Domestic Product of Chongqing, E is the national Gross Domestic Product, base period is 0, the end period is t , where $e'_i = \frac{e_0 \cdot E_{i,0}}{E_0}$ in sector i ($i=1,2,3$) in base period; R_i is

growth rate for Industrial Gross Output Value in sector i , r_i is Value-added of Industry growth rate in sector i ; L is relative growth rate, W is Structure Effect Index, u is Regional competition coefficient.

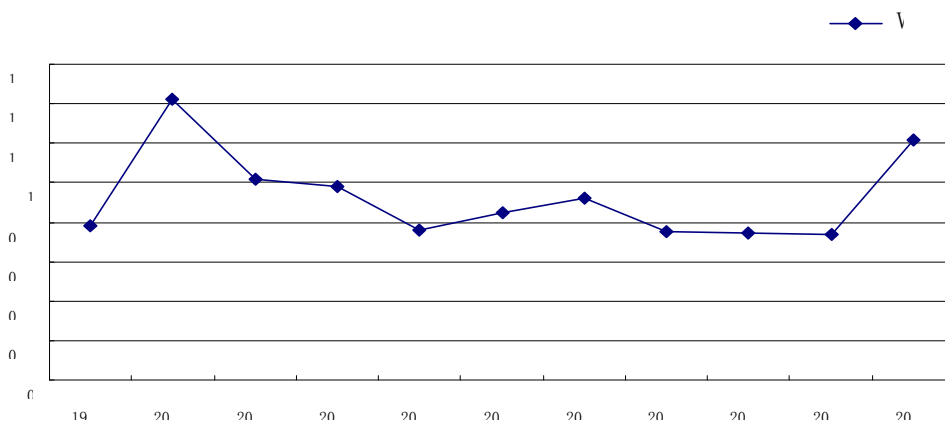
The data is from "2-1 Gross Domestic Product (1949-1978)", "Gross Domestic Product (1978-2009)", "Major Indicators of Industrial Enterprises (1978-2009)" of 《Chongqing Statistical Yearbook 2010》. This paper analyses Gross Domestic Product in three stages. The results are presented in Table 1 and Figure 3.

In the recent thirty years, the data of N_i are positive value. The three sectors are National growth departments. Because the industrial production system is the national top when "Three line construction" was end. There is no much growth space for the secondary industry. In 1984, the central government transferred part of powers of the economic management to Chongqing. Chongqing has been an independent trade port. Then the Primary industry developed rapidly, from 1988 to 1998. Under the leading government policy of Western China development since 2000, the speed of economic growth in Chongqing is far higher than the national average growth.

Table-1. Accounting-based shift-share partitions change in Chongqing from 1978 to 2009

Time	Industrial Structure	Total Growth (G _i)	National Share (N _i)	Proportional Shift (P _i)	Differential Shift (D _i)	Total Shift (PD)	Relative Growth Rate (L)	Structure Effect Index (W)	Competition Coefficient (U)
1978-1988	Primary	50.19	55.82	12.70	-18.33	-5.63	0.883	0.242	.644
	Secondary	83.15	95.24	0.37	-12.46	-12.09			
	Tertiary	56.23	73.13	-20.16	3.26	-16.9			
	Totalize	189.57	224.19	-7.09	-27.53	-34.62			
1989-1999	Primary	204.17	187.77	14.12	2.28	16.4	1.038	0.189	.476
	Secondary	561.97	603.41	26.62	-68.06	-41.44			
	Tertiary	593.31	508.12	-59.86	145.05	85.19			
	Totalize	1359.45	1299.3	-19.12	79.27	60.15			
2000-2009	Primary	321.93	366.11	20.48	-64.66	-44.18	1.062	0.291	.646
	Secondary	2688.74	2023.3	-153.37	818.81	665.44			
	Tertiary	1728.33	1966.34	132.93	-370.94	-238.01			
	Totalize	4739.01	4355.75	0.04	383.21	383.25			

Figure 3. The degree of industrial structure evolution in 1999-2009



We may find the proportional shift of the Tertiary industry is an disadvantage from P_i in the first 20 years. That's because the surrounding radiation function of "Three line construction" is restricted and the vulnerability of industrial structure gradually emerged. The share of the second industry in the national economy is too large to be an disadvantage to the structure. However, the Tertiary industry develop quickly in the recent 10 years, the Structure Effect Index is from 0.242 to 0.291. It is a rationalization evolution step. Chongqing government invest several trillion RMB in IT-industry, Heavy industry such as Auto and motorcycle and equipment manufacturing industry in the recent two years. The government try to promote the economy and industrial structure adjustment by these.

There is no competitiveness for the Primary Industry while the Secondary Industry has absolute advantage from D_i . Chongqing has some disadvantages, such as an inland city, physical distribution. The Chongqing government vertically integrate the industry division, try to use a new Processing trade pattern to resolve those disadvantage. From the Figure III, although there are ups

and downs in Chongqing industry upgrade condition, the General industrial structure is not too bad since 1999. Live hood economy as a catalyst promote the industrial upgrading degree rise perpendicularly since 2008.

The Path Dependency Analyses by S-C-P Model

In the formation process of the industrial structure in Chongqing, leading policy change the market structure by mandatory political means. The changes of product market and the adjustment of industrial structure may affect the driving mechanism of industrial structure evolutions in turn. Thus it caused the changes of political intervention executive orders. Since the open port period, Word War II period, "Three line construction" period, Reform and Openness, every decision of national destiny matter was made by the central government to promote the rationalization of industrial structure evolution. The national leading policy presents an external force mode with highly support and embedded consistency. However, the support and consistency just reflect in the starting point of political change and government political appeal. The emphasis of government policy has been different each time. The Policy separates industrial internal contact in Wartime economy period. The government instructions give priority to the second industry, which didn't consider the rational proportion of three industries in National Defense industry period. Thus, People's livelihood economic focus on orderly development of industrial structure which clear the relationship of market and the people's livelihood. This provides the policy interpretation to industrial structure adjustment which is based on the leading government policy. On the political purpose of constructing Chongqing to be the upper Yangtze River region economic center, according to market demand, the government developed People's livelihood economic. The connotation of the upper Yangtze river economic center is perfecting and deepening. Path dependence of industry structure adjustment on central government's political decision reflects the strategic intention of national level. Government leading policy such as 30 years' Reform and Openness, government transferred part powers of the economic management, the catalyst such as Chongqing directly under the jurisdiction of central government and other policies promote the industrial structure upgrading in the People's livelihood economic. The ratio of three industrial structures was 8.7: 55.2: 36.1 in 2010.

The government leading policy constantly promotes the up gradation of industrial structure adjustment. The industrial structure upgrading constantly promote the government leading policy improvements at the same time. We can see the venation of industrial structure and leading policy constantly promoting each other clearly. The positive cycle which is formed by industrial structure and market demand is a motive power and support economic development in Chongqing. Formulated by the central and Chongqing municipal government, the series of policy is a system that guarantees ensure the formation and continue working of positive cycle. The government leading policy presents the state of coherence and spiral progress. And the processes of industrial structure adjustment both rely on and develop government leading policies. Chongqing is just

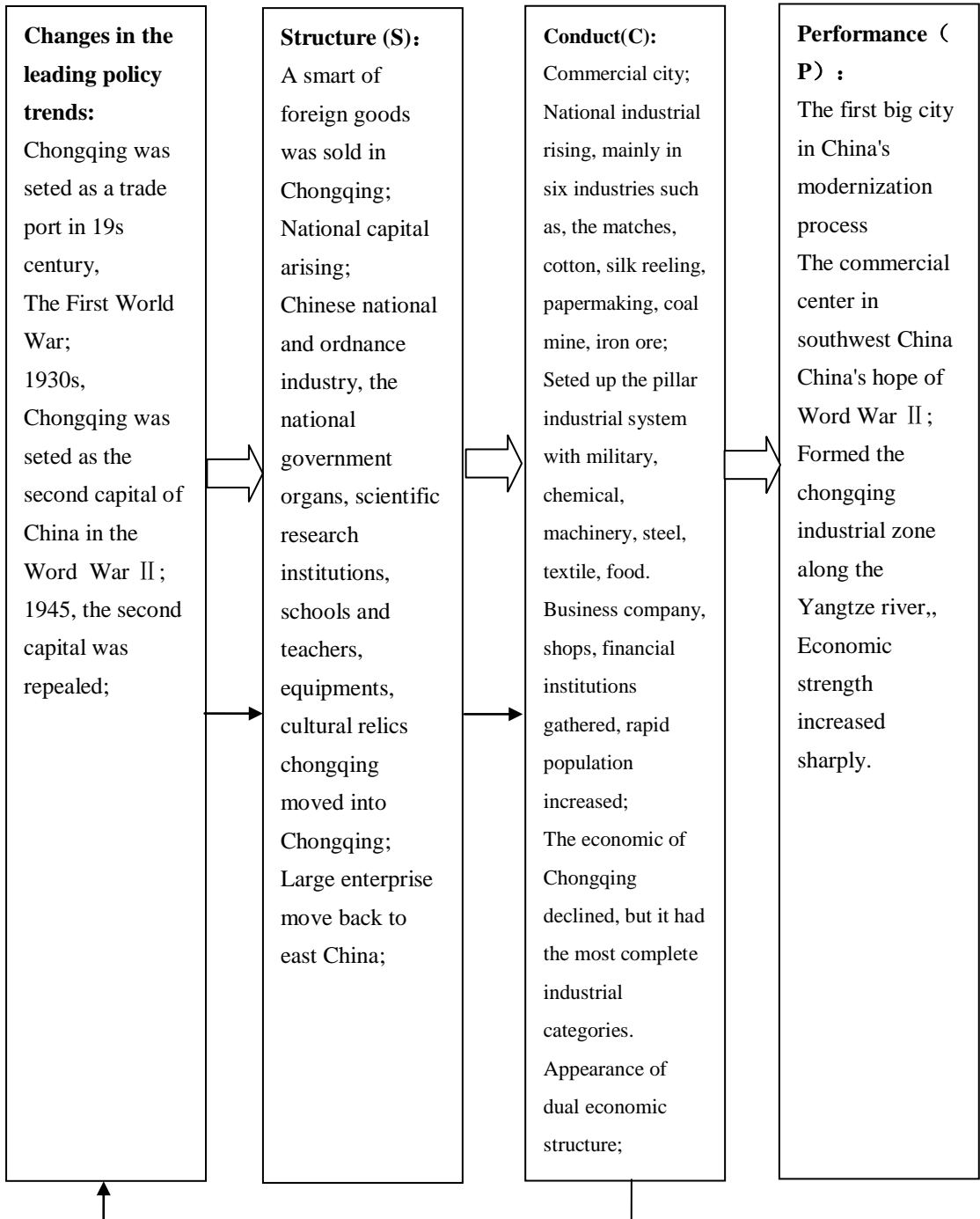
depends on the spiral of progress in the virtuous cycle. On the constantly perfect basis of national leading political policy such as Chongqing directly under the jurisdiction of central government, the development of the western region and People's livelihood economic promote the industrial structure evolution upgrade. In this part, with the founding of PRC, Reform and Openness as dividing points, the industry structure evolution process in Chongqing is divided into three stages. We describe the above three stages by S-C-P Model, and study the leading path dependence of industry structure adjustment on central government's political decision in Chongqing.

CONCLUSION AND DISCUSSION

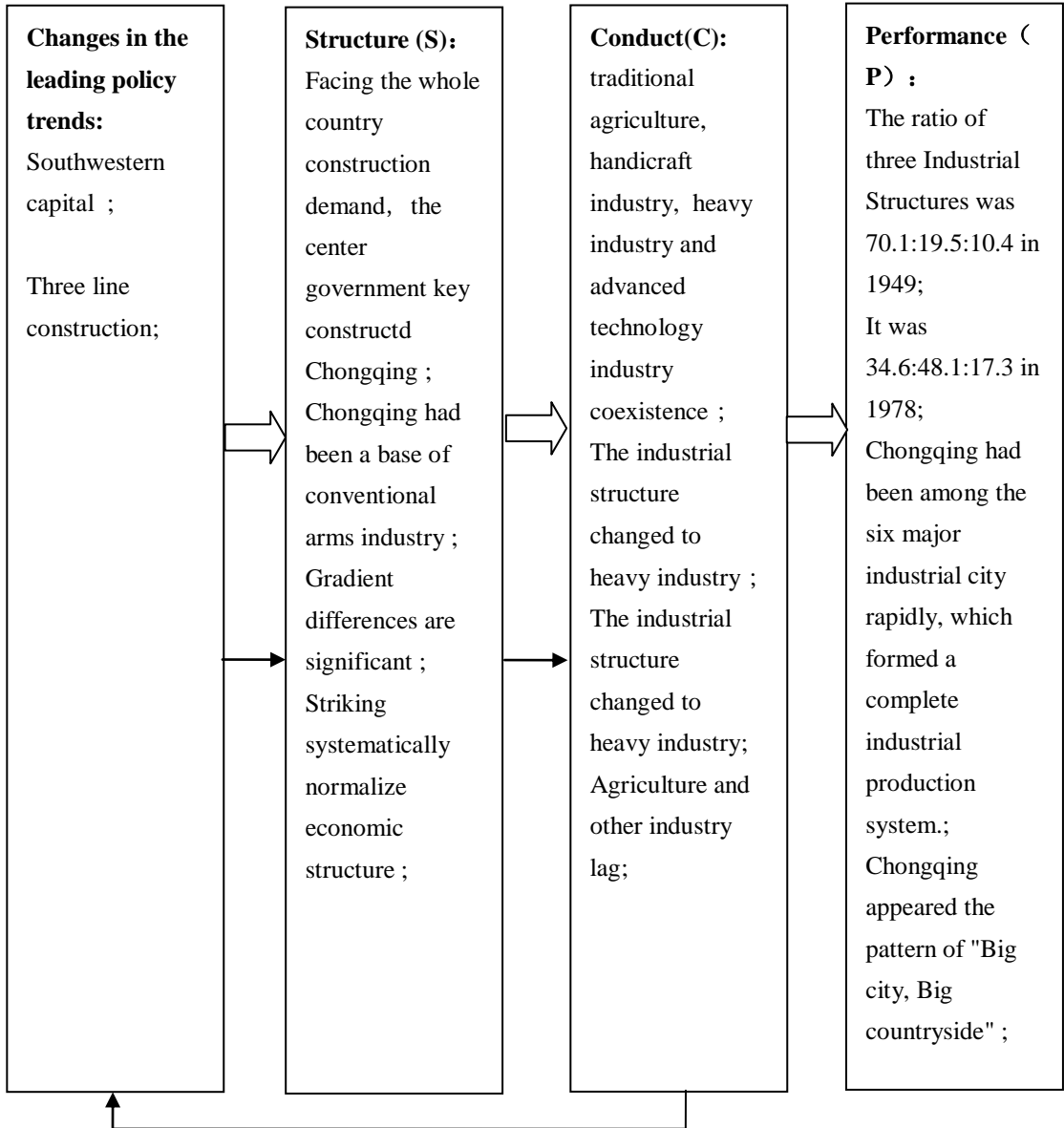
Since the thirty years of reforms and free economy, we have witnessed a sustained economic growth in China. However, we are facing a profound social change along with the globalization of increasingly fierce market competition, especially after the outbreak of international financial crisis. "The construction of Chongqing as economy center of the Yangtze river area" is the organic component of national overall development strategy. Since the "314" overall arrangement in 2007, Chongqing promoted industrial structure improvement through a series of a complete set of industry policy. Chongqing developed the public sector of the economy through the innovation of state-owned enterprises operations, operate Public Rental Housing planning and the household registration system reform which form the livelihood and the demand of people oriented economic model. Dozens of central enterprises signed cooperation agreements worth billions of RMB with Chongqing state-owned enterprises in 2009 which provided an operation mode of cooperation between the region and the central enterprise.

A series of industrial policy for the center of supporting policies is an exploration of development mode which is urgently needed in present China market economy. However, there arise some problems in the exploration and contradictions process. As the hard core of regional economic development and common prosperity implementation, state-owned enterprise is a business organization after all. How should it give consideration to the business attribute for undertaking the people's livelihood mission at the same time. Large scale Public Rental Housing construction has tremendous impact on commodity house. How to find a balance point between controlled economy and market economy? How does innovation processing trade area in Chongqing compete with the coastal trade area. And what chain reaction does that will cause. Financial expenditure grew huge in "Five Chongqing" construction, the government needs to prevent the waste of special funds and the risk of potential debt. Based on the above problems, Chongqing industrial structure evolution needs more innovation of the central government leading policy.

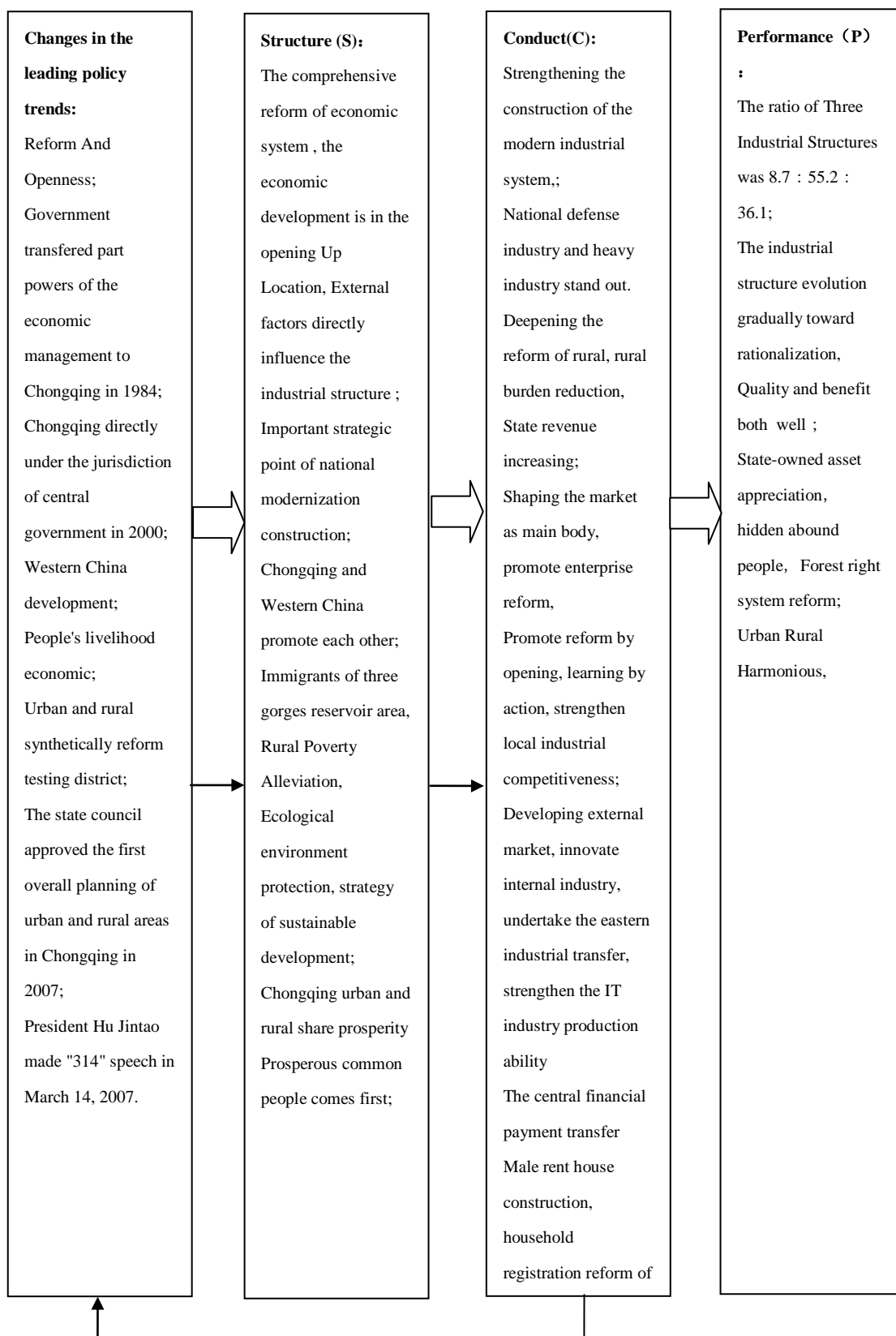
4.1. Forming process of industry structure in Chongqing before the founding of PRC



4.2. Forming process of industry structure in Chongqing from the founding of PRC to Reform and Openness



4.3. Forming process of industry structure in Chongqing after Reform and Openness



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