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Low-end Locking Dilemma and Breakthrough of Zhejiang Industrial Clusters in Global Value Chain

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Abstract: The industrial clusters are the mainstay of the economy of Zhejiang province, representing its economic characteristics and advantages. However, an undeniable fact is that Zhejiang industrial clusters are locked in the low-end part of global value chain and fall into the dilemma. The study analyzes the low-end locking dilemma of Zhejiang industrial clusters in global value chain and proposes some ideas and measures that will break through the low-end lock.

Key words: Zhejiang industrial clusters, global value chain, low-end lock, dilemma, ideas and measures

BASIC SITUATION OF ZHEJIANG INDUSTRIAL CLUSTERS

Since, the reform and opening up, by virtue of the private economy in Zhejiang institutional mechanisms, of the advantage of agglomeration of industrial cluster as a carrier, of the marketing advantage based on professional market, of the micro-institutional basis formed by market-oriented reforms, the distinctive industrial clusters (lump economies) is formed on the basis of the market organizations and the innovation of professional division of labor system. According to the Zhejiang Provincial Commission of economy and information statistics, as of the end of 2008, There are 312 lump economies whose total output value surpass 100 million Yuan, achieving sales revenue of 2.81 trillion Yuan, achieving export delivery value of 612.2 billion Yuan, hiring employees of 83100 million, accounting for 54, 62 and 56% of the province's total, respectively (Zhao and Zhao, 2011). It's obvious that Zhejiang industrial clusters (lump economies) play a vital role in promoting economic growth, solving employment problem and participating in international competition. It's no exaggeration to say that it's industrial clusters (lump economies) that create the rapid development of Zhejiang's economy:

- In terms of geographical distribution, apparent, lump and colorful "economic mosaic" is formed in the whole map of Zhejiang geographic territory. At present, among the province's 90 counties in 11 prefectures, 82 counties have formed industrial clusters. Industrial clusters have become the

development growth pole and the main carrier of prefecture region economy. Zhejiang industrial clusters mainly concentrate in the Hangzhou Bay and the coastal areas of Wenzhou and Taizhou. The top 6 cities whose lump economies absorb the largest number of employees are as follows: Wenzhou, 1049000 employees, Taizhou, 962000 employees, Ningbo 917000 employees, Jiaxing 856000 employees, Shaoxing 838000 employees, Jinhua 778000 employees (Zhejiang Economy and Trade Commission, 2008). Table 1 is the typical industrial clusters distribution in Zhejiang province

- From the perspective of industry types, industrial clusters in Zhejiang give priority to labor-intensive manufacturing industries, mostly the traditional consumer goods industries. Industrial clusters involve: textile, clothing, footwear, chemical fiber, leather, plastic products, medicine, chemicals, machinery and instruments, electrical machinery, building materials, hardware tools, aquatic products processing, marine medicine, electronic communications, automobile and motorcycle parts, household electrical appliances, wood processing, handicrafts, agricultural products processing. In all 30 categories in the manufacturing industry, there are 8 industries whose total size is over 160 billion Yuan and there are 4 industries whose total size is over 200 billion Yuan, namely, electrical machinery and equipment manufacturing industry (295,3 billion Yuan), textiles (269 billion Yuan), textile and garment, shoes and hat manufacturing (\$242 billion Yuan), transportation equipment manufacturing industry (233,7 billion Yuan)

Table 1: Typical industrial clusters distribution in Zhejiang province

Prefectures	Industrial sectors	Typical industrial clusters
Hangzhou	Clothing, chemical fiber, large machinery and equipment, electronic communications, household appliances, medicine, etc.	Hangzhou clothing, Xiaoshan chemical fiber, Xiaoshan auto parts, Xiaoshan down processing, Xiaoshan umbrella making, Binjiang communication technology, Xiasha biomedicine
Ningbo	Clothing, machinery, petrochemical, etc.	Yinzhou clothing and straw processing, Yuyao mold plastics, Cixi small household appliances
Shaoxing	Textile, printing and dyeing, machinery, medicines, chemical industry (textile auxiliaries), chemical fiber, etc. neckties, Xinlu	Shaoxing China Textile City, Zhuji shirts and socks, Shengzhou bearing and pharmaceutical raw materials, Shangyu labor protection products
Jiaxing	Textile, leather, machinery and instruments, etc.	Haining leather, Pinghu clothing and bags, Xiuzhou district silk, Haiyan standard parts, Tongxiang sweater
Huzhou	Textile (silk, wool, dyeing), clothing (children's), and building materials, etc.	Zhili children's clothing, Nanxun building materials, Anji bamboo products processing
Zhoushan	Aquatic products processing, marine medicine, machinery, etc.	Zhoushan aquatic products deep processing, marine medicine, shipbuilding, machinery manufacturing
Wenzhou	Machinery, plastics, packaging, printing, instrument and apparatus, consumer electronics, footwear, etc.	Pingyang plastic weaving, Cangnan printing signage, Ruian automobile and motorcycle parts, Yueqing low - voltage electrical appliances, Wenzhou shoes
Taizhou	Automobile and motorcycle parts handicraft products, footwear, plastic products, etc.	Jiaojiang plastic products, Wenling footwear and motorcycle accessories
Jinhua	Machinery, hardware and tools, agricultural products processing, textile, clothing, etc.	Dongyang magnetic materials, Yiwu clothing, socks and jewelry, Pujiang knitted garments, Yongkang hardware
Quzhou	Fertilizer, building materials (cement), mechanical and electrical (mining equipment, voltage transformer), etc.	Changshan bearing and building materials, Longyou bamboo products processing
Lishui	Wood processing, craftwork products, agricultural products processing	Longquan umbrella industry, Qingtian shoe leather, Yunhe wooden toys

Cha (2008). Embedding in global value chain of Zhejiang Industrial Clusters Upgrading Research-Based on the Analysis from the Perspective of Diversity of Country of Origin. Doctoral dissertation of East China Normal University

- From the viewpoint of the cluster size, the data indicate that, among 462 clusters With the county (city, area) for statistical units: There are 1000 clusters whose industrial output value is below 10 billion, accounting for 21.6% of the total; there are 250 clusters whose industrial output value is between 1-5 billion Yuan, accounting for 54.1% of the total; there are 53 clusters whose industrial output value is between 5-10 billion Yuan; there are 37 clusters whose industrial output value is between 10-20 billion Yuan, together accounting for 19.4% of the total; there are 22 clusters whose industrial output value is over 20 billion Yuan, accounting for 4.8% of the total and there are 14 clusters whose industrial output value is over 30 billion Yuan (Zhang and Zhang, 2012). The 14 clusters are listed as follows: Ningbo electric machinery, Ningbo metal products, Ningbo plastic products, Ningbo general equipment, Ningbo apparel, Wenzhou shoe leather, Shaoxing weaving, Ningbo textile, Ningbo handicrafts, Wenzhou clothing, Wenzhou Yueqing appliances, Wenzhou plastics, Jiaxing textile, Shaoxing dyeing

LOW-END LOCKING DILEMMA OF ZHEJIANG INDUSTRIAL CLUSTERS IN GLOBAL

On the whole, Zhejiang industrial clusters development is still in the initial stage of development, the

industries within the clusters overall are on the low side with low added value and are at the low end of the value chain link in the division of global value chain system. Specific performance: the cluster enterprises are engaged in the processing, assembly and simple manufacturing sector activities with low technological content and low added value; product sales rely on foreign middlemen, gaining foreign middlemen's orders by low cost; enterprises lack high value-added activities such as international marketing and brand operations. The low-end lock in global value chain plunge Zhejiang industrial clusters into a difficult situation.

Due to meager profits, Zhejiang industrial clusters become the world's sweatshop: The majority of Zhejiang industrial clusters undertake processing production of developed countries, thus they become manufacturing base of the international buyers and multi-national corporations. Due to the lack of core technology, brand and sales channels and other high value-added resources, Zhejiang enterprises can only become laborers in global value chain and they receive only modest processing fees at the expense of resource environment. Take clothing as an example, according to the survey, Zhejiang's own brands make up less than 30% of its clothing export, above 70% are processing trade in the form of OEM. In OEM processing, Zhejiang garment enterprises only earn about 10% of low processing fees, about 80% of the profits are taken away by international brand marketers

and foreign dealers (Chen, 2011). Even with its own brands, the products' export price is very low because of low technology, low class and lack of terminal sales channels. The products are only exported through the foreign middleman. According to the customs statistics, in 2009, the exports of Zhejiang clothing total 380700 million pieces; the average price is US \$4.34 per piece. So are leather, toys, hardware, small household electrical appliances, auto parts, plastic products and chemical raw materials. Zhejiang industrial clusters deserve the name "the world's sweatshop".

Due to continuous trade frictions, the enterprises within Zhejiang industrial clusters suffer a great loss: Zhejiang industrial clusters are mostly engaged in the traditional manufacturing. Generally speaking, the majority of products are characterized by low grade quality and low added value. In international trade, the enterprises within industrial cluster often carry out intense price competition to contend for the orders. According to the report, in the export market, the average price of socks is US \$0.21 per pair; the average price of tie is 1.6 dollars each, close to cost (Ling, 2008). Such low export prices and massive exports will have great impact on the industries in the importing countries and will bring about anti-dumping investigations.

According to the latest data released by the Ministry of Commerce, as of 2010, China has gone through the most anti-dumping investigations for 16 consecutive years and Zhejiang province was involved in most cases (Li, 2010). In 2008, sampling investigation by the Bureau of Fair Trade of Zhejiang Department of Foreign Trade and Economic Cooperation shows, from 2005-2007, 58.9% enterprises surveyed in the province were affected by foreign trade barriers to different extent, of which 22.26% enterprises encountered anti-dumping investigations. Due to return of goods, destruction of goods, cancellation of order and claims caused by foreign trade barriers, Direct trade benefit loss and indirect trade benefit loss of Zhejiang enterprise accounted for 13.19% in 2005, 13.49% in 2006 and 13.25% in 2007 of total exports (Cha, 2008). Trade frictions have caused a great loss to the export enterprises in Zhejiang.

Due to large resource consumption and heavy environmental pollution of OEM production, resource environment is heavily burdened: With the economic globalization, links of global value chain redistribute and integrate on the global scope and developed countries transfer some production links of large resource consumption and serious environmental pollution to developing countries in the form of OEM. Zhejiang

industrial clusters undertake a large number of such manufacturing links. According to the thematic report of "Cost Analysis of Zhejiang GDP Growth Process" by Statistics Bureau of Zhejiang province, the past GDP growth of Zhejiang has consumed a large amount of land, energy and other resources, therefore Zhejiang farmland is drastically decreased, sources of energy are in bottleneck and environmental pollution is worsened. Furthermore, electricity shortage, water shortage and labor shortage have arisen (Cheng, 2011). The OEM production of high input, high consumption, high emission and high pollution will be limited by carrying capacity of environmental resources. In recent years, electricity shortage, water shortage and labor shortage arisen in Zhejiang prove once again that the OEM production of large consumption of resources and heavy environmental pollution is difficult to continue.

Due to the global economic downturn, the enterprises within Zhejiang industrial clusters have fallen into the corner of "cooking a meal without rice": Since, the global financial crisis in 2007 which was triggered by the United States sub-prime crisis, the global economy has been in the doldrums. So far there are no signs of recovery, even there is the risk of 2nd time crisis. Facing the situation, residents in developed countries generally took cautious attitude to consumption owing to the future economic concerns (Cheng, 2011). Thus foreign demands emerged an unprecedented decline and atrophic trend. Accordingly, international buyers have reduced China's manufacturing outsourcing and purchasing orders. As a result, the enterprises within Zhejiang industrial clusters which rely heavily on exports have generally fallen into the corner of "cooking a meal without rice".

Due to RMB appreciation and rising costs, the enterprises within Zhejiang industrial clusters are having difficulty in progressing and are on the brink of closedown: In recent years, labor cost, raw material cost, capital cost and cost of other production factors have shown a rising trend. At the same time, under pressure from foreign countries, the RMB to foreign currency exchange rate also continue to show the appreciating trend. Due to RMB appreciation and rising costs of production factors, the OEM enterprises within Zhejiang industrial clusters which are at the lower end of links, are heavily burdened (Han, 2011). The pressure of RMB appreciation and rising costs are unable to be transmitted to big international buyers and foreign outsourcing companies who control brands and sales channels. The originally very meager profits shrink again, thus a large number of enterprises are having difficulty in stepping forward, or even going bankrupt.

IDEAS AND MEASURES THAT ZHEJIANG INDUSTRIAL CLUSTERS WILL BREAK THROUGH THE LOW-END LOCK IN GLOBAL VALUE CHAIN

From what is mentioned above, Zhejiang industrial clusters are locked in the low-end part of global value chain and fall into the embarrassing situation. Facing such a difficult situation, where should Zhejiang industrial clusters go? The study proposes that, the only way out is to break through the low-end lock and to climb up to the high end of global value chain, therefore the following measures should be taken.

Breakthrough path and strategy that are different from the “exogenous type” clusters should be taken: The industrial clusters are divided into two types, foreign driven “exogenous” type of industrial clusters and domestic driven “endogenous” type of industrial clusters. Exogenous industrial clusters are based on foreign enterprises directly invested by foreign multinationals as the core and numerous related industrial clusters are formed as the supplement, for example, most of the industrial clusters in Guangdong Province are exogenous industry clusters. “Endogenous type” industrial clusters are based on private capital investment, mainly traditional industries. Zhejiang industrial clusters basically are endogenous industrial clusters. Compared with “exogenous” industry clusters (such as Guangdong’s industrial clusters), the driving force of the capital, the integrity and the degree of association of the industrial chain, the position in the value chain, the elements and the supporting conditions differ, so it is different from the foreign driven exogenous type of industrial clusters in the high-end climbing path and strategy.

Breaking through the “prisoner’s dilemma”, the ability of independent innovation of Zhejiang industrial clusters should be improved: Zhejiang industrial clusters aim at breaking through the low-end lock in global value chain and climbing up to the high end of global value chain, the key is to improve the technological level and to enhance the capability of independent innovation. To do so, the enterprises must increase investment of research and development. But the reality is that, the enterprises within Zhejiang industrial clusters are mostly small and medium-sized enterprises with small scale and poor ability to resist risks. They still do not have separate research ability. Because technology spillover exists within the cluster, innovation achievement cannot avoid being copied. Thus the inherent power of technical innovation is lacked and cluster innovation sinks into the “prisoner’s

dilemma”. In order to effectively resolve the above two major problems of cluster innovation ability and innovation power shortage, the study argues that the following two measures should be taken: First, we must establish within the cluster an effective intellectual property rights protection and sharing mechanisms. While protecting the revenue of innovative enterprise, innovative knowledge will make modest spillover in order to achieve cluster revenue and social welfare maximization. It is generally believed that the “Patent Sharing Alliance” is an effective mechanism that moderate knowledge spillover is realized and the maximum cluster revenue is achieved (Liu and Yu, 2009). It is the establishment of a knowledge-sharing alliance between enterprises in the cluster, alliance members exchange knowledge that someone needs to know on a regular basis. By convention, if the legal entity provides knowledge to others far less than expected and gains knowledge from others no less than expected, it needs to pay the knowledge “surplus” enterprise prescribed monetary compensation. Cluster common technology platform should be established participated by cluster enterprises, scientific research institutes, colleges and universities, intermediaries and government related departments to conduct research and development of key generic technologies in the cluster. The establishment of cluster common technology platform not only helps to overcome enterprise’s problems of small scale, poor ability to resist risks and insufficient technical research capability, but also is an effective way to solve the insufficiency of cluster innovative power caused by the “free rider” behavior of the enterprises in the cluster.

Brand force of Zhejiang industrial clusters should be enhanced by establishing the regional brands: Zhejiang industrial clusters are locked in the low-end part of the global value chain, degenerating into “migrant workers” in the division system of global value chain. One of the important reasons is that Zhejiang industrial clusters lack independent brands. According to the survey, Zhejiang’s own brands make up less than 30% of its clothing export, above 70% are processing trade in the form of OEM (Luo and Cao, 2008). They can only earn very little processing fee at the expense of environmental resources and they are trapped in the “poverty” growing trouble. Therefore, if Zhejiang industrial clusters intend to break through the low-end lock in global value chain and get rid of the fate of “migrant workers” in global value chain, the key is to create their own brands. However, at present, within Zhejiang lump economies, small and scattered phenomenon is relatively common, individual enterprises

do not have the necessary resources and abilities of brand operation (Sun and Guo, 2007). Even if it is a leading enterprise, it is difficult to have the strength of international brand operation, so it must be combined with all regional enterprises to participate in the creation of the brand—namely, to create regional brand. The path and the thought of creating regional brand are as follows. First, a regional collective trademark should be registered, a unified position should be taken and thus competitive advantage is formed. Secondly, from the perspective of international level, the international standardization construction of cluster product quality control and production management should be strengthened. Thirdly, the cluster enterprises should be guided to use the collective trademark and share resources for development (Xu and Li, 2010). Fourth, collective trademark should be viewed as the core to expand advertising, marketing and dissemination of regional brand image. Regional brand should be vigorously promoted by a variety of media, shaping regional brand image. In the meantime, the connotation of regional brand should be delivered by overall marketing, symbiotic marketing, event marketing and other forms of activities, including the regional characteristics and the industrial advantages.

Leading enterprises should be built to enhance the counterbalance of Zhejiang industrial clusters in global value chain governance: Global value chain governance actually reflects the contrast and strategic counterbalance between multinational forces of the global value chain and the local cluster strength. Zhejiang industrial clusters are locked in the low-end part of global value chain; in fact, it is directly related to the governance structure. At present, Zhejiang industrial clusters are under the “captive” type governance of global value chain (Liu and Zhang, 2007). In this mode of governance, the leading companies in global value chain use their acquired power to formulate and oversee rules, implement standards and hinder the upgrade of China’s industrial clusters. Therefore, if the “captive” fate of Zhejiang industrial clusters in global value chain is changed; leading enterprises should be built. Various global forces in global value chain should be balanced by the strength of the leading enterprises in capital, technology, talent and its powerful influence on the market, thus the passive and captive status of Zhejiang industrial clusters should be changed (Yang, 2009). The governance model of global value chain should be transformed from “leading” (“captive” type) to “relational” (cooperative type) and to the joint governance of global value chain. The selection of leading enterprises in the cluster should conform to three criteria. First, they should have a large scale and

strong strength in terms of capital, technology and human resources. Second, they should have their own well-known brands with independent intellectual property rights so that they can take a strong lead in the formation and integration of upstream and downstream industry chain. Third, they should have a core competitive advantage in core technologies, patented product, management skills and market network so that they can have a strong pull and clustering effect on upstream and downstream industries.

Making use of the domestic market, breaking through the control and blockade of the leading enterprises in global value chain: If Zhejiang industrial clusters aim to breaking through the low-end lock of global value chain, they should build up brands and open up marketing channels. For OEM enterprises in the cluster, if they try to build up brands and open up marketing channels, they will inevitably threaten the leading enterprises’ core interests in global value chain; therefore they will also inevitably encounter prevention, or even punishment (Ye, 2005). Numerous studies home and abroad show that the leading enterprises of global value chain (international buyers and multinational companies), for their own interests, will allow and help the local industrial clusters in developing countries with technology upgrade and product upgrade. However, once the local industrial clusters in developing countries try to carry out R&D design, brand operation and channel construction, they pose a challenge to the vested interests of international buyers and multinational corporations. The local industrial clusters would be seriously blocked and controlled by them (Zhang and Liu, 2007). In this case, if the enterprises within Zhejiang industrial clusters take full advantage of a huge domestic market and the markets of developing countries, they will develop their own marketing channels and nurture and build up their own brands. Therefore, on the one hand, they can reduce the head-on collision with the leading enterprises of global value chain; on the other hand, they can achieve the purpose of creating their own brands and developing their own channels.

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