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RESEARCH ARTICLE

Globalization and Domestic Coping Strategies: The Development of China's Industrial Clusters

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Abstract
Industrial clusters play an important role in China's economic development. This paper argues that the concentration of Chinese industrial clusters at the low end of the value chain reflects the stage of China's economic development; Chinese industrial clusters' high-level of openness to international markets was a result of the timing of these clusters' emergence which enabled them to seize the special opportunities offered by multinational corporations' global production methods; Chinese industrial clusters' competitiveness has been strongly supported by specialized markets; and Chinese industrial clusters' governance, which relies on social networks based on consanguinity, kinship, and neighborhood, is due to the special pattern of state-society relations in China.

Keywords: Industrial clusters • Globalization • Specialized markets • Social structure • Social embeddedness • Social construction • Agency

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Academia once believed that economic and technological rationality would drive all capitalist economic systems towards a common institutional structure characterized by large companies, industrial concentration, and mass production technology (Baran & Sweet, 1966; Galbraith, 1967). The trend of industrial concentration was particularly obvious in the history of developed countries such as the United Kingdom and the United States. As large companies came to occupy the market in any given industry, small and medium-sized enterprises (SMEs) gradually declined (Chandler, 1977, 1990; Zeitlin, 1995). However, during the oil crisis and economic recession in the 1970s, scholars found that some industrial clusters – that is, a number of SMEs in the same or related industries with independent property rights that participated in the division of labor and cooperated with each other in adjacent geographical space – demonstrated strong economic vitality. The industrial clusters represented by the Third Italy, Silicon Valley in the United States, and the Baden-Württemberg region in Germany prove that the process of industrialization does not necessarily mean that the vertical integration of large companies must inevitably replace SMEs (Bagnasco, 1977; Brusco, 1982; Piore & Sabel, 1984). Although the economics and sociology literatures have explained the common characteristics of industrial clusters in terms of externalities, economy of agglomeration, transaction costs, and the evolution of family in the process of industrialization (Becattini, 1989, 1990; Marshall, 1890; Porter, 1990, 1998), scholars found that industrial clusters in different countries do not share a single model. Instead, there are many types (Markusen, 1996; Paniccia, 1998; Rabellotti, 1995).

The Chinese model of economic development is famous for its deep participation in the international division of labor and its industrial clusters have been the backbone of the world factory. Among the numerous industrial clusters in China, 90% of them are concentrated in the Yangtze River Delta, the Pearl River Delta, and the Bohai Bay Rim. On the eve of the global financial crisis in 2007, industrial clusters accounted for a significant portion of their region's sales and profits totals; in Jiangsu Province, they accounted for 40% and 53% of sales and profits totals, respectively; 59.35% and 55.54% in Fujian Province; and 50% and 51% in Zhejiang Province (Wei & Gu, 2009).

Italy is a good example of the four ways that Chinese industrial clusters are different from those of other countries.

First, in contrast to the Italian industrial clusters that focus on production in the middle-high end of the value chain and have their own brands of products, Chinese industrial clusters concentrate on the low end of the value chain and are usually in charge of foreign companies' OEM production, making low-end parts and assembling goods early in the global production chain. They rely on cheap labor to make profits through economies of scale, use low-cost equipment and technology in production, and learn and imitate new technologies and products quickly. Because of their high

quality and low prices, products made by Chinese industrial clusters are very competitive in the processing trade (Shi, 2007; Wang & Liu, 2009).

Second, in comparison to their Italian counterparts that are more conservative, Chinese industrial clusters are highly open to the outside world. Local governments in China set up special economic zones (SEZs) to attract foreign direct investment (FDI). At the same time, many local companies in light industry have undertaken outsourced work from multinational corporations. Even industrial clusters in light industry, which used to focus on domestic markets, began to compete in the international market after China joined the World Trade Organization (WTO). Many companies have occupied a considerable amount of market share (Liu, 2006).

Third, whereas Italian industrial clusters usually rely upon traditional distributional channels, Chinese industrial clusters are often spatially proximate to specialized markets which serve as important distribution channels for their products. Zhejiang, Guangdong, and Jiangsu are some provinces that host many industrial clusters and are also the home for specialized markets: physical places used mainly for spot wholesale and centralized trading of certain kinds and several kinds of goods with strong complementarity or substitutability (Gao, 2011; Lu & Wang, 2008).

Fourth, while the governance of Italian industrial clusters tends to depend on social organizations such as trade associations, their domestic market focused industrial counterparts in China rely more on social networks based on consanguinity, kinship, and neighborhood for governance and export-oriented industrial clusters depend on the market mechanism to coordinate inter-firm relations. SMEs in Chinese industrial clusters lack the collaborative public good services that are available to their Italian counterparts in the areas of financing, vocational training, technological innovation, marketing, and management (Wei & Gu, 2009).

How might we explain the above characteristics of Chinese industrial clusters? This paper uses an analytical framework from economic sociology, which emphasizes the social embeddedness of economic activities, the social construction of economic outcomes, and the agency of economic actors (DiMaggio & Powell, 1991; Granovetter, 1985, 1992; Zukin & DiMaggio, 1990). The social embeddedness of industrial clusters can be measured by the timing of their emergence in relation to the dynamic pendulum movement of globalization between releasing market forces and protecting society (Gao, 2001; Polanyi, 1944). The social construction of Chinese industrial clusters' characteristics is driven by the interactions between the external pressure of globalization and internal responses from domestic economic actors. The role of agency is illustrated by the various innovations of local governments and private entrepreneurs. Together, these social phenomena determine the position of Chinese industrial clusters within the value chain, their level of openness, the distributional channels for their products,

and their governing mechanisms. Next, we will discuss these three social phenomena and how they are used in our analytical framework, then we apply them in empirical studies on the four corresponding characteristics of Chinese industrial clusters.

The Pendulum Movement of Globalization and Domestic Response: A Perspective of Economic Sociology

The pendulum movement of globalization provides us with an opportunity to study how different temporal and spatial conditions affect the characteristics of industrial clusters. Karl Polanyi argues that the long-term movement of capitalism is driven by two opposed forces: one is the effort to release market forces and the other is the effort to protect society. The swing between these two conflicting goals constitutes the pendulum movement of globalization (Gao, 2001, 2006; Polanyi, 1944). The first wave of globalization saw the release of market forces from 1870-1913. It ended and the pendulum began to swing back the other way after the collapse of the gold standard and the outbreak of World War I.

During the interwar period and the Great Depression of 1929-1933, the public policy paradigm in many countries began to swing toward social protection. There were three types of responses to this in industrialized countries: liberal capitalism as represented by Roosevelt's new deal in America; fascism as represented by Germany, Italy, and Japan; and socialism as represented by the Soviet Union (Polanyi, 1944). After World War II, under the leadership of the United States and Britain, the Bretton Woods system and the General Agreement on Tariffs and Trade were born. Sustained by these two pillars in the postwar international economic order, the second wave of globalization slowly began. Since the postwar period, modern globalization has undergone three stages.

The first stage was from the late 1940s to the end of the 1970s and was characterized by the policy paradigm of social protection. Despite the fact that the trade/global GDP ratio began to rise and that there were calls for trade and financial liberalizations, public policies in developed countries still emphasized the restriction of market forces in this period. When the Bretton Woods system collapsed in the early 1970s, many developed countries adopted floating exchange rates. Eventually, financial liberalization enabled capital to flow freely across national borders which led to the rapid increase of FDI (Gao, 2001, 2006a).

The second stage was from the early 1980s to the 2008 global financial crisis and was characterized by the policy paradigm of releasing market forces. The rise of neoliberalism and the Washington consensus led to liberalization, privatization, and deregulation movements. When globalization reached its peak efforts of releasing market forces, one profound feature was the rise of global production by multinational

corporations. As far as Chinese industrial clusters are concerned, this stage was crucial because it coincided with their emergence in the 1980s-1990s.

The global production system promoted by transnational corporations is the most important change that globalization has brought to the world economy since 1980s. Supported by financial and trade liberalizations, multinational corporations began to allocate resources and organize production around the globe, which not only led to the large-scale transfer of labor-intensive industries from developed countries to developing countries, but also brought about the rapid developments of offshore production, outsourcing, and FDI. The reshuffling of the manufacturing industry around the world provided both opportunities and challenges for various countries (Gao, 2018).

The third stage spans from the 2008 global financial crisis to the present, in which the policy paradigm has shifted back toward social protection.

China's economic reforms and the emergence of its industrial clusters occurred during the second stage of globalization whereas Italy's industrial clusters essentially emerged during the first stage. The historical timing of each country's development is crucial to identify the important variables that explain the emergence its industrial clusters; within each stage of globalization different variables explain the emergence of industrial clusters. Here, we identify and discuss those variables peculiar to the point in historical time in which China's industrial clusters emerged.

We argue that a country is restrained by its stage of economic development and institutional heritage. At the same time, however, the process of globalization offers countries opportunities to take advantage. Four independent variables associated with globalization and the domestic response in China explain the characteristics of Chinese industrial clusters that emerged in this period. These variables include the stage of economic development, the timing of development in relation to the pendulum movement of globalization, the relationship between industrial clusters and specialized markets, and the social structural conditions of the country after the period of reform and opening up started.

Next, we will discuss the development of China's industrial clusters in regard to these four aspects.

Stage of Economic Development and Clusters in Labor-Intensive Industries

China's stage of economic development significantly affected the positioning of Chinese industrial clusters within the value chain. The Chinese economy was backward when the country started its reform and opening up campaign in early 1980. As a consequence, Chinese industrial clusters necessarily emerged only in labor-intensive industries.

Shenzhen-Dongguan in Guangdong Province and Zhejiang Province are the two regions in China where industrial clusters have concentrated.

"Three-to-fill processing and compensation trades (TTFPACT)" were the initial driving force behind the development of export-oriented industrial clusters in southern China. China established its first SEZ in Shenzhen in 1979 and the first inflows of foreign capital attracted by the SEZ entered China through TTFPACT. "Three-to-fill processing" refers to the practices of "processing with supplied materials", "assembling of supplied parts" and "processing with supplied samples." The "compensation trade" refers to the practice in which buyers import machines, equipment, technology, and certain raw materials on the basis of credit provided by foreign companies, then pay for those goods with products or services within a certain period of time. This is an important means for developing countries like China, which lack of foreign currency and technology, to utilize foreign capital, enhance export capacity, and accelerate economic growth. The most important features of TTFPACT is that market demand comes before production and both sides have agreed that the final products will be sold by foreign companies. In this way, industrial clusters do not suffer too much pressure for survival.

Although the Shenzhen SEZ, which borders Hong Kong, directly took over the transfer of Hong Kong's processing industry, its government set a still higher goal for the SEZ. At the time, all companies in the SEZ would be involved in TTFPACT. However, the SEZ government had a goal of industrial upgrading so did not allow its companies to work at the bottom of the value chain. Instead, they transferred production of those goods with the least value added to Bao'an county, Shenzhen' neighbor. The SEZ government required companies in the SEZ to build factories in surrounding counties and people's communes, outsource low-end production and assembly to those factories, and ordered each county to set up trading or service companies to directly handle its quota of foreign exchange. In addition, the government gave companies in these rural areas certain privileges reserved for companies within the SEZ: the county government was given the authority to approve TTFPACT projects and those rural companies that combined agricultural, industrial, and commercial businesses were exempt from income tax for three years. Supported by this policy, Bao'an county set up industrial districts in several places with convenient transportation near the periphery of the Shenzhen SEZ and promoted TTFPACT industries among the towns and villages along both sides of three area highways. This was the first group of industrial clusters in China. By the end of 1979, there had been about 200 companies in Shenzhen participating in TTFPACT. By the mid-1980s, that number of companies exceeded 1,000. In Bao'an county's rural areas, per capita collective assets increased from 293 RMB in 1979 to 15,600 RMB in 1990, and then to 187,000 RMB in 2000 (Shenzhen Institute of Innovation and Development, 2018).

Industrial clusters that were born in rural areas targeted domestic markets and so were concentrated in traditional industries. One reason for this was that, in the process of rural industrialization, many local residents had to rely on their families to start a business. The limited capacity of the family to mobilize resources meant that the scale of a business they set up had to be small or medium-sized, the chosen industries had to be a traditional labor-intensive industry with a low entry threshold, and they could only specialize in certain segments of the production process. Farmers' families that tried to industrialize faced great difficulties in raising funds which led to the division of labor in production. "Through a division of labor, industrial cluster lowered the entry threshold for capital in each segment of production, which enabled different families to choose their own position in the division of labor in the industrial clusters according to how much capital they had; the finer the division of labor, the more people with different abilities and talents can find their own positions" (Ruan et al., 2007).

Zhejiang is a province well known in China for its poor endowment of natural resources. Its per capita possession of natural resources is the seventh lowest in the country. Located along the country's coast, halfway between Japan and Taiwan, Zhejiang has long been considered at risk for war, so there have been few major state investments. Before the economic reforms, Zhejiang lacked a strong industrial foundation and was a backward province mainly engaged in agriculture. From 1953 to 1978, Zhejiang's per capita investment in fixed assets of state-owned units was merely 411RMB, ranked lowest in the country. Typically, heavy investment from the government or foreign companies, or both, drive rapid economic growth in underdeveloped areas. The southern part of Jiangsu, at that time, was a model of government investment, while Pearl River Delta in Guangdong was a model of foreign investment. In contrast, Zhejiang had neither; even as late as June 2002, only 10.7% of the province's companies with an output value of more than 5 million RMB were SOEs. Foreign capital played a minimal role. In 1992, foreign capital accounted for only 2.79% of the fixed asset investment in Zhejiang Province. Although foreign investment grew after 1992, by 1998, the share of foreign capital in Zhejiang's fixed investment had still only increased to 5.9%. In the same year, by comparison, other provinces' shares of foreign investment in fixed assets were much higher with 34.77% Jiangsu and 33.26% in Fujian (Zheng et al., 2002).

With the absence of capital accumulation before the reform and opening up period and a lack of FDI inflows after, Zhejiang's first industrial clusters had to begin in labor-intensive industries. According to a survey in 1998, a big chunk of the 110 industries in Zhejiang were in traditional labor-intensive industries such as textiles, clothing, chemical fibers, plastics, and general machinery manufacturing. Although the companies in these labor-intensive industrial clusters were small, they were very competitive in the market place. For example, Wenzhou's footwear industrial cluster consisted of 5,000 companies,

20% of the national market; the clothing industrial cluster consisted of 2,000 companies, 10% of the Western-style suit market; the eyeglasses industrial cluster consisted of 500 companies, 80% of the national market; the button industrial cluster consisted of 750 companies, 70% of the national market; and the cigarette lighter industrial cluster consisted of 260 companies, 70% of the world market. Shengzhou's necktie industrial cluster consisted of 1,000 enterprises, 80% of the national market and 30% of the world market. Zhuji's hosiery industrial cluster possessed 68,000 hosiery machines, representing 40% of the national market (Zhu, 2003, p. 50).

Compared with Chinese industrial clusters, Italian industrial clusters since 1980s have taken a path of high-end development based on innovation, design, and brand (Porter, 1990). One of the important reasons was that Italy had already become a developed country when globalization first came to knock on its door. As many developing countries began to participate in the international division of labor, Italian industrial clusters could no longer compete by simply reducing wages and lowering working conditions; they were forced to take the path of improving their products and production processes. Most companies focused on design, the production of small batches of customized products, and building their niche by uniquely positioning themselves in the market. After the 1980s, Italian manufacturers introduced new equipment incorporating computer-aided design or auxiliary production, creating a perfect combination of high-tech and traditional industries that produced fine products. The strategy of emphasizing innovation and design enabled Italian companies to occupy the high-end market with high added values (Criscuolo, 2002).

The Timing in the Process of Globalization and the Openness of Industrial Clusters

The timing of the development of industrial clusters in relation to the pendulum movement of globalization has a profound impact on their openness to the international market. Chinese industrial clusters came into being *after* the birth of the global production system. Under this new system, a developing country could join the international division of labor even with only production factors; well-functioning domestic institutions were no longer a precondition to join international competition and economic development. Chinese industrial clusters wholeheartedly embraced the opportunities provided by global production, and took full advantages of FDI. As a result, they were very open to international markets.

When China started its reform and opening up campaign in 1979, the tide of globalization accelerated. Throughout the 1980s, neoliberalism, which emphasized releasing market forces, had shaped the paradigm of public policy in many countries. This ideology advocated free flow of capital across national borders. FDI provided Chinese export-oriented industrial clusters with capital, technology, and distribution channels, so from day one they were quite open to the outside world. Industrial clusters

targeting domestic markets often came into being after the rise of specialized markets, which provided these clusters with strong distribution channels. When foreign merchants found these sales platforms, they quickly connected these domestically oriented industrial clusters with the international market because the daily necessities these industrial clusters produced were in great demand among developing countries and low-income groups in developed countries.

The development strategy adopted by SEZ governments was to participate in the global production system using cheap labor, attract FDI, focus on labor-intensive industries, emphasize the low value-added segments of the value chain, and accelerate domestic economic development by promoting exports. In order to attract FDI, China worked hard to build infrastructure in the SEZs in coastal areas. The construction of hotels, transportation, power stations, telecommunications and other infrastructure significantly reduced private companies' operating costs. The Chinese government adopted various preferential tax policies toward FDI beginning with the development of SEZs in coastal areas in the early 1980, to implementing the Foreign Investment and Foreign Corporate Income Tax Law in 1991, up until the new Corporate Income Tax Law in 2008. In order to attract FDI, many local governments supplied low priced or even free land. Because governments at all levels relied on FDI's exports to promote economic growth, the owners of capital were given more attention. In contrast, for a long time, migrant workers did not have protections against wage abuse, dismissal, or poor working conditions and suffered poor social security, children's schooling, and housing. It was not until 2003 that the government began to improve these conditions (Zheng, 2002).

The development of SEZs built close connections between industrial clusters and international markets. By the end of the 1990s, 20 years after Shenzhen opened the first SEZ in China, the country attracted 23,608 foreign-funded projects. The amount of foreign capital in signed contracts reached $29.8 billion, while the amount of foreign capital actually utilized was as high as $ 200.1 billion. Among the 23,608 projects, 17,361 were green-field FDI, with signed contracts of $26.4 billion, and $13.8 billion actually utilized. The gaps between these two groups of numbers show that a far bigger portion of foreign capital actually utilized was invested not in the form of green-field FDI. During the period of 1979-1998, manufacturing projects accounted for 76.62% of the total number of foreign investment projects, 63.01% of the total amount of committed foreign capital, and 63.74% of the total amount of foreign capital actually utilized (Zhang, 2000: 24-26). The concentration of foreign investments in the manufacturing industry strongly supported the development of industrial clusters along the Pearl River Delta. The strong export-orientation of these industrial clusters is also reflected in the share of the Pearl River Delta region in the total exports of the whole country, which jumped from a mere 1.4% in 1980 to 36.1% in 1998 (Chen et al., 2003, p. 27).

The rise of industrial clusters in the Pearl River Delta region was brought about by two major shifts in the manufacturing industry in Asia. In the early 1980s, Hong Kong's manufacturing industry was transferred to the mainland. With the help of Hong Kong's capital, the Pearl River Delta region witnessed the rise of labor-intensive industries and the accomplishment of initial-stage industrialization. After the Asian financial crisis in 1997-1998, and especially after the US internet bubble burst in 2000, a big portion of the electronics industry in Taiwan shifted to the mainland. Shenzhen, Dongguan, Huizhou and other places attracted a huge amount of Taiwanese investment, and many export-oriented industrial clusters were developed for the electronics and communication industry (Chen et al., 2003, p. 26). In the early days, foreign companies produced only simple parts in Shenzhen, and sent in parts produced in other countries to be assembled here. After China's entry to the WTO in 2001, more and more foreign capital came to Shenzhen to invest in the electronics industry. Around these famous foreign brands, an increasing number of local companies began to produce increasingly sophisticated parts. Eventually, Shenzhen became the hardware capital of the world's electronics industry, and more and more of the electronics industry's high-end components were produced there. At the time, there was a saying that if a road problem in Dongguan interrupted traffic for a week, the computer supply in the international market might suffer a shortage. Since the 2008 global financial crisis, Guangdong's electronic industry began to further upgrade. High-tech industries are constantly expanding as new technologies emerge: tech such as smart phones, unmanned aerial vehicles, internet of things devices, big data, cloud computing, advanced communication technology, and artificial intelligence have been constantly emerging. At the same time, the strength of industrial clusters' R & D has continued to grow (Gao & Ru, in press).

Yiwu, Zhejiang Province, represents a typical case of domestically-oriented industrial clusters that saw rapid international expansion after China joined the WTO thanks to the city's specialized market, the Yiwu Small Commodity City. Yiwu's industrial clusters began to enter international trade in 1999, the year China and the United States completed their negotiations on China's entry into the WTO. Foreign merchants had come to Yiwu before then, attracted by its small commodities, but Chinese merchants hadn't paid much attention to the international market before 1999. In 2002, Yiwu officially opened its International Trade Center, with a constructed area of 340,000 square meters. The new facility hosted more than 10,500 wholesalers. At the time it opened, 40,000 merchants visited every day including, up until the 2008 global financial crisis, more than 10,000 foreign merchants. More than 90% of the wholesalers in Yiwu were engaged in international business, and more than 60% of commodities transacted at the Yiwu International Trade Center were exports that went to more than 140 countries and regions. At the city's peak, 2,500 containers were exported daily. Yiwu had become an important distribution platform for industrial clusters in the whole of Zhejiang Province. Lured by international trade, there were 616 foreign business

organizations in Yiwu at the end of 2005. In this small city of 1.7 million residents, according to the Chinese standards, the local branch of the Bank of China conducted business with 182 countries and regions – a rare phenomenon for the national bank (Xu, 2007, pp. 143–145).

The Yiwu-Xijiang-Europe (YXE) Train is a freight train that runs to European cities along nine different routes. Tianmeng, a private company in charge of its operations, has set up 5 logistic distribution centers and 8 overseas warehouses along these routes that cover 34 countries. Using Yiwu International Trade Center as the export platform, the YXE trains transported more than 2,000 kinds of commodities to Europe, including daily necessities, clothing, cases and bags, hardware, etc. The goods went to industrial clusters not only in Yiwu, but also in Zhejiang, Shanghai, Guangdong, Anhui, and eight other provinces. Yiwu has even established a sub-market called the China Small Commodities Center in Warsaw and an industrial park in Belarus (Qu & Wei, 2018).

Compared with their Chinese counterparts, Italian industrial clusters are obviously less open. This is directly related to the timing at which the countries' respective industrial clusters appeared in the process of globalization. Most Italian industrial clusters came into being long before the era of global production and their development was driven primarily by endogenous industrialization forces. Therefore, most industrial clusters in Italy made final products, components and parts, specialized machinery, and auxiliary services (Porter, 1990). When globalization accelerated in the 1980s, local politics in Italy still focused on protecting local SMEs, building local production networks, resisting the invasion of foreign capital, and avoiding the low-end development path of lowering wages and exploiting workers (Longoni & Rinaldi, 2008; Trigilia, 1986, 1990). Since the wage level in Italy was much higher than that in developing countries, even when foreign capital arrived at Italian industrial clusters in the 1980s, they tended to emphasize R & D and relied on local industrial clusters for production. Few foreign capital investors have made large-scale investments like building factories as they did in China. This has limited the openness of Italian industrial clusters.

Specialized Market and the Distributional Channel of Industrial Cluster

Another major characteristics of Chinese industrial clusters is that their development was driven by market demand. The first group of export-oriented industrial clusters emerged to address the international demand for the processing trade. After China started opening itself up to the outside world in the late 1970s, orders from foreign companies through the TTFPACT became the driving force behind the development of industrial clusters in Shenzhen. This was followed by another wave of FDI in which multinational corporations set up factories to take advantage of China's cheap labor for global production. Under the global production system, multinational corporations mobilized Chinese industrial clusters to bring their products to the international

marketplace. Domestically-oriented Chinese industrial clusters, on the other hand, developed after the rise of specialized markets. A *specialized market* is a regular gathering of a large number of merchants who engage in spot wholesale, in certain kinds of goods or several kinds of goods with strong complementarity or substitution (Lu & Wang, 2008).

After the government loosened its control over the market, Chinese farmers built specialized markets with the goal of making money from transactions with agricultural products and light industrial daily necessities. Impressed by the huge market demand brought by these trading platforms, some local government officials and farmers-turned-entrepreneurs saw new business opportunities and started producing hot commodities locally to sell in these specialized markets. Another development that spurred the growth of specialized markets was that export-oriented industrial clusters in coastal areas often overbuilt their production capacity, so some entrepreneurs brought the surplus parts made by companies in these clusters to specialized markets which served as transaction platform connecting these export-oriented industrial clusters and domestic markets. There was strong demand for such parts because when domestically-oriented industrial clusters could use the higher quality of export-intended parts it would increase their market competitiveness.

An example of this circumstance can be seen in the Pearl River Delta where there are basically two types of manufacturing industries: one on the east bank that is the export-oriented industrial clusters, and one on the central and west banks that is the domestically-oriented industrial clusters. The former attracts a lot of foreign capital as it relies on cheap labor and land to participate in the international division of labor and operates at the low end of the global production value-chain system. The latter consisted of mainly domestic companies that produce import substitutions. They often import equipment and components from overseas and then develop substitutes with their own brand names for domestic markets. From there, entrepreneurs localize production and extend their businesses both upstream and downstream along the value chain (Chen & Li, 2003, pp. 31-32). In order to localize production, companies in domestically-oriented industrial clusters must integrate both upstream and downstream products. They must find not only parts from domestic companies, but also parts made by FDI companies. In this sense, the development of industrial clusters and specialized markets really have a mutually promoting and enabling mechanism.

From the very beginning, the electronic industry in Shenzhen has been driven by the demands of the international market, especially TTFPACT. In 1988, Shenzhen established SEG Electronics Parts Market, China's first electronics market sponsored by more than 160 manufacturers in China and 10 companies from Hong Kong (Zhang, 2017). By the mid-1990s, Shenzhen had become the "hardware capital" of the world

factory. Initially, it was well known for making products such as radios, recorders, electronic organs, and game machines. After the turn of the century, the Shenzhen SEZ became a global center for making mobile phones, laptops, health devices, and drones. A major distribution platform that helps absorb the SEZ's enormous production capacity is the specialized market located in Huaqiangbei. In its heyday, the huge Huaqiangbei electronics market occupied more than ten high-rise buildings, where one could buy every kind of components and brand product imaginable (Xu, 2018). The importance of specialized markets like this one is reflected in the "China Huaqiangbei Electronics Market Price Index" which has been published daily to the world since 2007. This index is considered a weathervane and barometer of the international electronics market. In July 2011, the Chinese government began to officially use the Huaqiangbei index as an important indicator for monitoring the country's macroeconomic performance (Liu, 2019).

The development of specialized markets created domestic market-oriented industrial clusters. After the government gave up its strict control over the economy in the 1980s, some farmers-turned-entrepreneurs invented specialized markets to make money by creating commercial distribution channels to sell various daily necessities outside of the state-owned commercial system. When local government officials and entrepreneurs saw the huge demand for these products in specialized markets, they seized the business opportunities and mobilized more farmers to engage in producing these goods. This led to the development of industrial clusters around specialized markets.

Yiwu, Zhejiang Province, is a typical example. In the late 1970s, Yiwu's farmers first sold small commodities at a farmers' market in the late 1970s. By 1982, the Yiwu municipal government built the first prototype of the Small Commodity City. In 1984, Yiwu's government officially adopted the "developing the county by promoting commerce" strategy that specifically relied on the small commodity market as the engine for local economic development. By 1992, the facility at Yiwu Small Commodity City had been updated four times, and was ranked number one in a list of top ten commodity markets in China. The number of wholesale stores in the Yiwu Small Commodity City increased from a little more than 700 in the early 1980s to 23,000 in 1992 (Xu, 2007: 23-24). Although Yiwu Commodity City became the leader in the small commodity industry, it was under increasing competition pressure because many regions in China began to imitate it. Under those circumstances, the Yiwu government adopted a new strategy: "Relying on commerce to promote industrialization and let both industry and commerce enable each other". Supported by its huge commercial platform, the local government actively guided private companies into the manufacturing industry by building infrastructure for industrial parks to host industrial clusters. The industrial clusters in Yiwu greatly benefited from the market information and sales networks generated from this commercial capital, and they demonstrated strong

competitiveness in their industries such as socks and hosiery, accessories, zippers, clothing, toys, stationery, and hardware, etc. (Lu & Wang, 2008).

In China, the connection between industrial clusters and specialized markets is very strong. Specialized markets are unique and significant distribution channels for Chinese industrial clusters. The provinces well known in China for hosting most industrial clusters – Zhejiang, Guangdong, Jiangsu, and Hebei – are also famous for the strong presence of specialized markets. For example, in 2001 Zhejiang Province had a population of 46 million people and 420 specialized markets. There were 58 commercial stores and revenue of 7,314.50 RMB for every 10,000 people (Zheng et al., 2002, p. 29). According to a 2005 report, 85 out of 88 counties(districts) in Zhejiang Province hosted industrial clusters. Among these industrial clusters, 519 had an annual output of more than 100 million yuan, including 118 in the 1-5 billion RMB range, 26 in the 5-10 billion RMB range, and 3 with output greater than 10 billion RMB (Xu, 2007, p. 107).

Whereas specialized markets play a significant role in Chinese industrial clusters' distribution channels, Italian industrial clusters do not have support from specialized markets. Companies in Italian industrial clusters usually produce brand name products so many of them use franchised stores or traditional department stores as their primary distribution channels. Export consortia have been an important way for SMEs in Italian industrial clusters to obtain overseas orders or to sell products in international markets. This kind of consortium is a cooperative organization composed of a group of companies producing similar products. Each member company pays a one-time security deposit when joining and then pay its share every year to cover the consortium's operating costs. In 1998, Italy had about 350 export consortia (Baldoni et al., 1998). In market competition between Chinese industrial clusters and Italian industrial clusters, Chinese producers usually expand their market share more quickly due to their price advantage, economy of scale, and the highly effective marketing provided by specialized markets.

Social Structure and the Governance of Industrial Clusters

Chinese society has always valued family-kinship relations. However, the family-based economy was depressed for a long time due to the planned economy era. The economic reforms of the 1980s replaced the people's commune system in rural areas with the household responsibility contract system. Family once again became the basic unit of production in rural areas. A large number of empirical studies on domestic-oriented industrial clusters in different regions of China show that the overwhelming majority of these industrial clusters consist of small workshops and factories that were established, owned, and operated by farmers' families in contrast to the export-oriented industrial clusters wherein many factories were established by FDI (Li, 2009; Liu, 2009; Shi et al., 2004; Zhu, 2003).

Take the socks industry in Zhuji, Zhejiang Province as an example. This industrial cluster based on family social networks was born in the early stages of rural industrialization. A local technician at a collectively-owned hosiery factory called Zhuji Datang learned that in the region's history, there was a tradition of weaving socks and that many households still kept the old-style hosiery looms. At that time, there was little capital accumulation in rural areas, and farmers could not afford to buy modern looms at market prices. The technician organized some disciples to purchase the old hosiery looms and restored them to working condition. With these efforts, the Zhuji farmers got access to their first batch of hand-operated hosiery looms for a very low price and that did not require complicated technical expertise. The farmers welcomed the looms. The demand for socks was huge and every household joined the enterprise of knitting socks. An industrial cluster emerged. Later, local hosiery machine manufacturers developed their own low-cost electric hosiery looms. Even after Italian and South Korean companies began to produce computer-controlled hosiery looms for medium and high-end socks, local hosiery machine manufacturers cooperated with Zhejiang University and developed similar machines of the same quality, but at one tenth the price. Low-cost machinery and equipment support hosiery production in this industrial cluster, which mainly consists of numerous workshops and small factories run by farmers' families (Zhu, 2003).

The governance of domestically-oriented industrial clusters is often carried out through families' social networks. Relatives, friends, and neighbors undertake one or more segments of production and jointly organize the entire production chain – from knitting socks to sales. Two cases illustrate the role played by social networks in Zhuji's socks industrial cluster. One business owner set up a shaping factory. His sister's family was responsible for weaving socks, and his relative operated the wholesale distribution for their products at Yiwu Small Commodity City. Another business owner was responsible for the sales of hosiery machines and accessories. His brother's family was responsible for the production of hosiery machines. His parents founded a hosiery factory, and his father-in-law's family was responsible for hosiery sales (Zhu, 2003, pp. 138–139). An important fact about these social networks is that, in spite of the fact that it is familial relatives that cooperate closely in business, they are yet financially independent from each other and they each have independent property rights.

In the export-oriented industrial clusters in Shenzhen, governance is more often based on social networks formed in market transactions. For these industrial clusters, a governance model based on consanguinity or kinship is less feasible because operators in this sector are often regional transplants or are owned by foreign investments. The mobile phone industry is a good example. A large number of companies concentrate within a one-hour drive of Shenzhen. FDI by global cellphone producers created the first grouping of parts suppliers and assembly factories. Subsequently, local companies

made use of these FDI-built factories' extra production capacity to produce "shanzhai" (counterfeit) mobile phones through a practice of reverse outsourcing. Except for exterior design and function selection, shanzhai mobile-phone companies outsourced all segments of production, including chip manufacturing, software programming and system integration, production of parts and components, assembly, and distribution. In the most extreme example, three farmers could operate a mobile phone company, with the first person responsible for exterior design and function selection, the second person responsible for managing the account of outsourced production, and the third person responsible for contacting the distributional channels. The person in charge of exterior design and function selection might go to Huaqiangbei's specialized market every day, find the hottest trend on the market, and gather the latest industry information. The person in charge of sales could simply choose sellers in Huaqiangbei. Because the mobile phone industrial cluster was nearby the Heiqiangbei specialized market, and transactions can be on a cash basis, distrust among trading partners, *i.e.*, transaction costs, are greatly reduced. Problems can be solved quickly through face-to-face communication because the relevant companies are all in an immediately proximate area. This helps the industrial cluster improve its operational efficiency (Gao, 2011). This model of production has further evolved and new groups of global mobile phone producers are emerging – companies like Huawei, Xiaomi, Oppo, and Vivo – that have successfully competed in the international marketplace against other independent brands, each with their own operation systems.

In Italian industrial clusters, on the other hand, another type of non-state/non-market governing mechanism is prevalent: industry associations and cooperative consortia. Italian SMEs in industrial clusters rely on industrial associations, consortia, and cooperatives, to solve common problems such as technological innovation and dissemination, marketing, financing guarantee, raw material procurement and testing, information provision, quality control, training of entrepreneurs and managers, tender translation, financial and legal affairs consultation, bookkeeping, and research on foreign markets, etc. (Baldoni et al., 1998; Criscuolo, 2002). In addition, the majority of SMEs that produce similar products often adopt the strategy of competition by differentiation which seeks market segmentation and addresses the diversified needs of consumers (Piore & Sabel, 1984; Shi, 2007).

Local Italian governments in regions that had large concentration of SMEs promoted and funded business service centers and innovation centers when globalization accelerated in the 1980s. The Emilia-Romagna region is a good example. Its regional development committee, ERVET, promoted the development of service center networks, some of which were dedicated to specific industries, such as CITER (textiles and clothing), CERCAL (footwear), and CESMA (agricultural machinery manufacturing). Governments also encouraged the establishment of more general service organizations

to help with cross-industry concerns such as ASTER (Technology development), CERMET (Quality improvement), and SVEX (Export promotion) (Brusco & Righi, 1989; Pyke, 1992; Schmitz & Musyck, 1994).

This difference in the governances of industrial clusters between China and Italy raises an interesting question: why have trade associations not played a more important role in Chinese industrial clusters' governance? The reason lies in the state-society relations.

Since the people's commune system ended with the planned economy, there have been two major mechanisms rural areas to maintain the order of grass-roots communities in contemporary China. One is the social networks based on consanguinity, kinship, and regional bonds centered around the individual; the so-called "pattern of difference" (Fei, 1992). The other is the state, which actually replaces and suppresses social organizations. Although the state has allowed social organizations to exist, it has encountered a dilemma: the state needs the help of social organizations, but also fears that it may lose control over them. This governmental tension has limited the role of trade association in governing industrial clusters.

Reflecting this predicament, social organizations in China are managed through a dual administrative system: social organizations must register with and report to one government agency while another government agency directly administrates the organization's professional activities. Such a cumbersome administrative system creates a high-registration threshold that makes it difficult to establish social organizations (Wang, 2007). The state's control over social organizations has weakened their autonomy and turned them into mere quasi-administrative agencies. At the grass-roots level, weak social organizations have restricted individual participation in public affairs and hindered the development of civil society. Consequently, the governance of inter-firm relations relies mainly on the market or private social networks, which in turn has limited the scope of cooperation between companies and inhibits their ability to provide public goods to SMEs within industrial clusters. Although the number of trade associations has increased since the 1990s, the autonomy of trade associations is still weak and, on the whole, they function more like "assistants" to the government (Chen & Xu, 1999; Yu, 2002).

In theory, private trade associations can do more to serve their member companies as compared to government-run trade associations. In reality, however, they tend to collect information only for their respective industries, ask the government for help, protect the interests of their own members, and promoted exhibitions and sales. They are powerless to enforce self-discipline in their industries, improve the management of their member companies, provide financing, support technological innovation, promote exports, supervise product quality, or set industry standards (Chen et al.,

2004). As a result, many companies in Chinese industrial clusters produce similar products with a high degree of homogeneity. They imitate each other, for better or worse, and compete primarily by lowering prices. This is common even in Zhejiang Province, where industrial clusters are prosperous (Ma & Ju, 2009).

Conclusion and Discussion

There are three basic propositions in economic sociology. The first is that economic activity is socially embedded. Economic phenomena can only be understood in relation to social structure; it cannot be simply separated from social structure and analyzed within its own sphere as some economists have imagined. The second is that economic outcomes are socially constructed; they are shaped by the interactions among various economic actors. In other words, the economic outcomes are always determined by the joint forces of multiple actors. The third is that agency plays an important role in economic actions. This proposition is a fundamental issue that all social sciences must confront, including sociology, political science, and economics. Agency-structure relations deal with the tension between subjective and objective conditions and human actions. In social sciences, agency refers to the ability of individuals to act independently and make free choices, while structure refers to the various constraining factors around human behavior, including social class, religion, gender, ethnic group, and other restrictive conditions. To some extent, an individual actor's agency is affected by one's past structural conditions. Cognition and beliefs formed through past experience, the dominant ideology in society, and the particular subjective position in social structure into which one was born all test the willingness and ability of economic actors to pursue independent action (Gao, 2018).

This paper has analyzed the development of Chinese industrial clusters guided by these three basic propositions and with brief comparisons to industrial clusters in Italy. It shows that different timing in relation to globalization has consequences for the rise and form of industrial clusters between the two countries and that this timing is an important measurement of the independent variable, the social embeddedness of industrial clusters. Put differently, industrial clusters did not emerge in vacuum, but developed in specific temporal and spatial conditions in history. The birth of China's industrial clusters coincided with the rise of global production, which brought not only FDI but also the transfer of labor-intensive industries from developed countries to developing countries. In addition, the country's economic development was still in its early stages and its cheap labor was especially suited for the demands of offshore production and outsourcing practiced by multinational corporations whose major goal was to reduce labor costs. Constrained by these structural conditions, Chinese industrial clusters therefore started from the low end of the value chain in the international division of labor and at the same time reached a high-level of openness to the

international market. In contrast, Italian industrial clusters were born long before the emergence of global production and by the time that mode of production came to Italy in the 1980s, Italian industrial clusters had no choice but to promote industrial upgrading under strong competition pressure from low-cost production in developing countries. Because its labor costs were much higher than those of developing countries, existing companies struggled for survival and called for social protection. As a result, Italian industrial clusters' level of openness to foreign capital was naturally lower than that of China.

The process of social construction in industrial clusters is illustrated by the fact that their development was not determined solely by the market forces brought by globalization, but rather by the joint efforts of different actors that pursued their respective interests within each county's given institutional environment and social structure. Although the market principle requires efficiency, it also brings risk to all companies in the Chinese industrial clusters that have strong connections with the international market and the potential failure is a constant threat to the survival of these companies. To stand withstand and hedge against this danger, domestically-oriented industrial clusters in China rely on social networks based on the ties of consanguinity, kinship, and neighborhood. In contrast, industrial clusters in Italy depend on various social organizations. This complicated process of social construction has shaped the governance of industrial clusters in both countries.

Finally, this study shows that even under the constraints of structural conditions, economic actors can still pursue strategic actions to maximize their gains. A good example of agency's role is the Chinese entrepreneurs' innovation to creatively use specialized markets to support industrial clusters. Chinese industrial clusters, especially those developed in rural areas, evolved after the development of specialized markets. These farmers-turned-entrepreneurs initially just tried to earn money through these distributional platforms. However, the built-in growth mechanism sustained by the interactions between the economy of scale and the economy of scope triggered a rapid development of specialized markets. Normally, selling the same kinds of products in the agglomerated space would greatly increase competition pressures. Nevertheless, these entrepreneurs soon found that by differentiating their products and offering rich variety, they were able to attract more buyers. The more buyers came to specialized markets, the further revenue increased. This snowball effect was a powerful driving force behind for the development of specialized markets (Gao, 2011; Xu, 2007). A distinctive characteristics of Chinese industrial clusters is that most of them are located in places with no natural endowments whatsoever to support their industries. The secret for their success is that they rely on specialized markets to ensure a demand for industrial clusters even before they come into being, creatively overcoming the constraints of poor endowment conditions.

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