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## From Disembedding to Re-embedding: Double Movement of China's Food System, 1978-2018

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## **Abstract**

By reviewing the changes in the relations among country, market and social actors, this paper studies the practical history of food system transformation in China, and discusses the evolutionary dynamics and core mechanisms of the double movement. Food market system appeared in China in 1978. By the mid-1990s, the rural-oriented market mechanism played a major role in the reform of the country's modernization, which became an important force in the extraction of funds, land and labor, accelerating the process of the disembedding of food system from the society. After 2000, the food supply and demand situation fluctuated in domestic market, introducing three rural issues: agriculture, rural areas and farmers. Therefore, the government changed its attitude towards the marketized food system with the intention of stabilizing food supply by alleviating the three rural issues. Nevertheless, the policy intention of the country, this "visible hand", was obstructed by the market, the "invisible hand", in the market-oriented reform. In the context of the continuous extension of the urban and rural food supply and demand chain, and the unceasing solidification of the food system's power structure, the market-oriented food system further accelerates the process of disembedding, which triggers problems on systemic food safety and environmental damage. At the same time, social actors spontaneously choose "One Family Two Systems" (OFTS) and Alternative Food Nets (AFNs) system as action mode to promote the country to improve the food market disembedding situation and form a reverse movement from legal and political levels. Thus, China's food system has experienced a double movement from disembedding to re-embedding. The power of re-embedding comes from the modernization process of the country, and its mechanism is combination without cooperation. Only with the active changes of social actors and the country, promoting the re-embedding of market institutions into social relations, can we promote the sustainable development of the food system.

## **Keywords**

Food System; Counter-movements; Disembedding; Re-embed; Combination Without Cooperation

## **Acronyms**

OFTS In full One Family Two Systems  
AFNs In full Alternative Food Nets  
WTO In full The World Trade Organization

## **I. Introduction**

The food system is a diverse and complex system based on the relations between human and food. This important concept is defined in a way that goes beyond the definition of agricultural production and traditional understanding of food safety. It can better focus on the structure of food supply and demand, analyze the power of each role in it, and discuss the market and social relations behind it (Tansey and Worsley, 2014).

The discussion about the concept of food system transformation is a research review, beginning with the relations between food and humans, and extends to the relations among market, society and nature. In the process of building a new food system, the three sectors use food as a carrier to change the relations of people in traditional society. These relations include the demand structure level of food in production and consumption, the level of food sovereignty of capital and power (Bernstein, 2016; Friedman and McMichael, 1989) and the degree of “disembedding” and “re-embedding” in markets and society (Polanyi, 1944).

Since the 1980s, the well-known food system is undergoing a new series of profound changes. In the wave of globalization and marketization, subjects with different purposes had established new global food rules (Friedman and McMichael, 1989). It has changed the ways, in which food was produced, circulation, distributed and consumed, reshaping a framework of the food system.

This paper focuses on the process of China's food system transformation since 1978. In the context of marketization and globalization, China's food system is undergoing a major transformation from embedding to disembedding. This transformation has led to food safety issues and ecological degradation. The existence of a capital-led disembedding mechanism—the upgrade of the food quantity and quality, which requires the government to reform in land and market to cope with, promoting the further development of the food market, then leading to the disembedding of the market. On the contrary, the new food system established from the transformation has once again affected the relations between social actors and food, and formed the current status China's food

system: the detachment of the food market leads to food safety crisis and natural ecological degradation.

Thus, a counter movement mechanism occurs. Social actors, composed of peasants and consumers, take the lead, the government responds with strategy and legislation, and the market begins transform forwardly. To cope with these crises, three sectors, including the government, social actors and markets, have carried out a series of counter movements in an effort to re-embed the market into social and natural relations.

This paper aims to propose a self-generated interpretation framework that includes double movement of disembedding and re-embedding. By discussing the food system transformational dynamics and mechanisms, it provides an epistemological basis for the understanding of the new counter movement in the relations of social actors, the government and market.

## **2. Research Reviews: Construction and Development of Food System Transformation Perspective**

### **2.1 Consumption Structure was Upgrading**

The first level begins with the analysis of food structure transformation and its upgrading. Along with the development of the market, the amount of food consumption has been objectively increased, thereby promoting the upgrading of China's food consumption structure, which is the trend of food system transformation at present.

China is currently undergoing a food consumption upgrade from mainly consisting of plant fiber to combination with animal fat and high protein. A feature of the upgrading of consumption structure is that more and more consumers are beginning to increase the consumption of wheat, temperate fruits, vegetables, high-protein and energy-intensive foods (Huang et al., 2009; Pingali, 2007). Between 2005 and 2015, China's cereal demand share fell by 12%, while meat and fish demand increased by 8% and egg increased by 30% (Fan et al., 2017).

Meanwhile, the upgrading of food consumption has also provided a historic opportunity for agriculture transformation and increase in farmers' income. The increased demand for more and better food by urban consumers objectively creates opportunities for increased production and diversification of food in the rural areas, ultimately improving farmers' livelihoods (Thanh et al., 2005). From the perspective of agricultural development, the food consumption upgrade has provided an unprecedented opportunity for the historical process of "de-involution" of China's agricultural development (Philip C. Huang, 2010).

Therefore, in general, the development of the market will inject more vitality into agricultural production, essentially improve the welfare level of food consumers, and solve the problems of food quantity safety and agricultural development in this process.

However, with the improvement of consumption levels, food quality and safety has become a controversial topic. Whether it's an investigation from a global perspective or an analysis of China's development over the past 10 years, the



discussion of food safety issues goes beyond the quantitative aspect, and requires a balance with quality. In other words, the food system problem that China is facing, is not only the question of “how to feed China” (Brown, 1995) ,but also of “what should we do to feed China” (Li et al., 2012). Therefore, it is necessary to carry out a discussion on the deep changes in the China’s food system.

## 2.2 Power Structure was Consolidated

The second level is an analysis of the changes in power of food system participants. The international reflection on the food system transformation is rooted in Immanuel Wallerstein's Theory of World System, which began with a profound discussion of capitalist agricultural production methods (Wallerstein, 1974). On this basis, Friedman and McMichael (1989) inherited the research paradigm of observing practical problems through the capitalist system, and introduced the establishment process of the world system into food research. According to the study, the global food system development pedigree can be extended from the European Recovery Programmed after World War II (Friedmann, 1982) to the hegemonic era of UK and US, and the globalization process after the 1980s (McMichael, 1994). From this, we can analyze the historical development of the global food system with three different historical stages, from a more profound perspective of capital and power, and portray the political and economic conflicts of different forces within the system, indicating that in the world food system dominated by capital, power is being concentrated in large enterprises, and the trend of solidification emerges.

After the Second World War, with the appearance political and economic patterns of new international and technological advances, the food system showed a tendency of industrialization and globalization (McMichael, 2009). Since the 1960s, Western countries entered the stage of industrialization and globalization from the pre-industrial food system, which led to the industrialization in food production and distribution processes, and increased competitiveness towards agricultural systems around the world. As a result, the

relations between human and food underwent profound changes. In the name of free trade, development and food supply safety, on one hand, this transformation has increased the productivity of agriculture and promoted human progress. On the other hand, a pattern of “agriculture without peasants” appeared in food supply, and “no varieties selection” in food consumption (Winders, 2009; McMichael, 2013) .

After 1980s, the global food system dominated by neoliberalism was further consolidated. In this system, agricultural enterprises emerged as a new form of capital and accumulation, and formed a way of integration or interconnection of industrial capital, commercial capital and financial capital over time (Isakson, 2014). Later, multinational grain enterprises hold the core interests of the food system, and used government aid of food, the WTO, the green revolution, and the second green revolution to consolidate their power in the system. While guaranteeing the power and status of developed countries in global competition, they sacrifice the food producers and consumers including in their own nationals and food sovereigns of other countries, resulting in ecological crises, fluctuations in food markets and price, also increasing hunger, as well as the crisis of global industry profits and accumulation (Van Der Ploeg, 2010).

From the perspective of power and capital analysis, the food system consists of different roles, and the key that connects them is a series of competitive behaviors dominated by interests (Bernstein, 2016). Specifically, the various actors involved in the food system are in the midst of competition for operational power to produce and supply food. The deepening of marketization is the main driving force for the transformation of the food system, resulting in greater risk challenges and more intense interest distribution competition. Thus, in the food system structure after the transformation, more profit of food production and circulation flows to suppliers, and the intermediaries between the peasants and consumers, while the interests of peasants and consumers becomes less (Dixon, 2009), and the behaviors of disadvantaged peasants in production and distribution are increasingly difficult to judge (Pilcher, 2012). At this point, the food system has formed a funnel-shaped power structure.

Intermediaries and large enterprises are at the core, while producers and consumers at two ends.

In this context, China's food system has also presented three major trends. First, intermediaries are in the middle of the food system power funnel. Less enterprises are mastering more market share. From agricultural materials suppliers, such as agrochemicals, energy or equipment companies, to traders, retailers and catering service providers, their growing economic influence is concentrating. Second, peasants and consumers are at the end of the food system pyramid (Li et al., 2012). The power of local markets is gathering in regional and global markets. Large leading enterprises see the world as a unified global market, and gradually develop the ability to optimize resource allocation. However, the peasants who actually participate in the production, and citizens who in the consumption have lost their decision rights in this market. Third, agricultural enterprises are looking for more secure methods to control their rights and risks, and maximize their benefits, which includes the management of intellectual property rights in various science, technology and information management, the consolidation of related laws, to form a system of rules that is beneficial to them.

The concept of a food system can be further extended in the analysis of power and capital in food production, distribution, distribution, and consumption. The mainstream is the social self-protection brought out by Friedmann (2005). This idea inherited Polanyi's "double movement" theory of society and economy. It is considered necessary to establish a coalition of food producers and consumers to regain national food sovereignty in order to rebuild a reasonable food system. Based on this, this study will combine the above two views, carry out the third level of analysis, further discuss the transformation of the food system from the perspective of social self-protection, and analyze the transformation process of "embedding" to "disembedding" in China's food system. With the literature reviews, this paper will discuss the core mechanism, and the conclusion will be taken as an important background for the social self-protection of peasants in food safety.

### 2.3 Social Market was Formed: An Analysis Based on the "Disembedding" of Food Systems

The third level is the analysis on the interaction of "market-society". From the theoretical perspective of Polanyi's "disembedding", "embedding" and "double movement", the development of the market has changed the decision and behavioral logic of social actors in food system. Therefore, the transformation trend of the food system is: the rapid development of the market mechanism causes the "embedded" market mechanism becomes "disembedded" in the society, forming a social market, inducing problems of food safety and environmental damage.

Since the colonial period, western countries have built a world food system that follows the logic of capital in the name of free trade (Mintz, 1986). The negative effect is that it infringed the food producers and consumers including in their own nationals and food sovereigns of other countries. In the process of agricultural transformation, developed countries replace human beings with machines, land with capital, and the natural nutrient cycle of agriculture with a large amount of external material energy input, causing problems as peasants losing their jobs, farms being merged, price scissors existing between industrial and agricultural products, high-cost production and environmental pollution (Sage, 2011).

From the macroscopic level, after 1978, China has entered the era dominated by the market economy, and the versatility of agriculture was further simplistic, leaving only economic attributes. As a result, the food system presents an hourglass pattern. The particularity of grain production, in the process of commercialization, is determined that free market trade mode will enable agricultural enterprises with financial support to have a huge impact on the interests of a large number of small-scale farmers with price fluctuations (Nestle, 2013; Koç et al., 2016). In such a food system, intermediaries will benefit the most, while producers and consumers, at both ends, are in a decisive position. The trend of disembedded food markets has determined the decrease of competition and increase of monopoly. At present, ADM, Bunge, Cargill and Louis Dreyfus have controlled 80% of global grain trade. Therefore, China's food

liberalization market has become a stage for agricultural companies to compete for hegemony.

Down to the micro and practical level, the emergence of market society has changed the behavior of peasants and consumers. As the market system is gradually established in the food sector, which includes both natural and social significance, profit-seeking behavior begins to dominate the food exchange system. It increases the food supply and improves the efficiency of circulation, while gradually weakening the social and natural attributes of the food itself. This will easily lead to insufficient information, trust, and supervision, and each individual will involve in the adverse selection dilemma, described by George Akerlof.

In the production process, since food quality is peasants' individual information, consumers can only pay according to the average quality of the market, which makes it difficult to identify the safe food. In order to make profits with the existing market price, profit-seeking peasants often use excessive capital fertilizers and pesticides instead of labor input, which will result in unsafe foods, becoming the origin of food safety threats. In the consumption chain, urban families led by the profit-seeking behavior, require food not only cheap but also convenient to buy, with good quality and taste. But in fact, such behavior by consumers will create the demand for unsafe foods, forcing safe foods out of the market, and they will pay for the risks of unsafe food production.

The result of such repeated interaction between the two results in the failure of food market. In addition, with the condition of information asymmetry, government could also have a situation of regulatory failure, which finally leads to the phenomenon of "bad food drives out good", and food safety incidents and the ensuing environment damages began to intensively burst.

### **3. Stage Division of China's Food System Transformation**

Before 1978, China was in the stage of planned economy. The economy was embedded in social development, and the relations between the government and the economy was very close. The government had a significant influence on

the production of peasants and the consumption of urban consumers. During this period, market was elusive in the food system. However, after 1978, with the emergence of the agricultural product market, the relations between peasants and urban consumers was profoundly changed by the process of marketization. This section will elaborate on the three stages of the of China's food system transformation process, and use the eight analysis elements of the food system, proposed by Bernstein, to review these stages.

### 3.1 Market Deepening and Disembedding

After 1978, the food market appeared, and the government's agricultural policies tended to reflect the efficiency and profitability of the market-oriented agricultural system. Under this system, the relations between peasants and agriculture, and the way of production, life, behavior and social roles of the peasants had changed.

Since the 1980s, Chinese society had completed a profound transformation from "ethical economy" to "social market" in about 30 years (Wang Shaoguang, 2008). After two reform landmarks in 1978 (recovering rural market trade) and 1985 (cancellation of unified purchases), China's agricultural product market has developed rapidly, and a large number of peasants had re-engaged in market operations, and the degree of marketization had rapidly deepened. Agriculture had entered into national trade, marking the peasants, who were self-sufficient and working for their livelihoods were included in the market. Although the peasants' behavior in the local market and in the family of householding existed at the same time, their production behaviors were deeply affected by the anonymous market, and the "incidental production" described by Polanyi, gradually became popular.

From the perspective of the relations between market and society, China's food system began to enter the status of both traditional production and modern production. The market gradually occupied the dominant position, and combined with modern production, to form a strong capital-led production pattern, promoting the transformation process of food system. In Polanyi's view,

an appropriate transforming speed of is the key to any successful social transformation. Only by comparing the speed of transforming with the speed of people's adaptation, can the real effect of social transformation be determined (Polanyi, 1944). The transformation of food system is no exception. If the immediate results of the transformation are harmful, then self-examination needed to be conducted immediately. Therefore, in the progress of the food system transformation, the speed of this progress needs to be changed to a level that society is able to accept.

The development of China's social market had a profound impact on its food system. The rapid development of the food market made it "disembedded" from the society, and became the basic background for frequent food safety incidents. In Polanyi's the Great Transformation, he establishes a theoretical system for observing the relations between society and market. He uses the concept of "embeddedness" to describe the basic order of traditional society, revealing its internal mechanism in long-term stability, that is, "market logic should be subject to social ethics, and social ethics should be subject to natural laws"(Li and Ping, 2015). However, the A model of money-making production makes the food market "disembedding" and override the society. The information asymmetry in the food market further induces market failure, government failure and social failure, which cause social damage, reflecting in food safety incidents frequent occurrence.

In response to the "disembedding", the food system began to reflect in two models, referring to A and B. The A model is dominated by capital logic, while the B mode by life logic. The emergence of the latter is indicating that the food system is undergoing a social self-protection movement in the process of transformation. The purpose is to respond to the "disembedding" trend of the food market during the transformation process, and to carry out the "re-embedding" attempt. The funnel structure of the food system determines the combination of power and power-holder, and the interests of producers and consumers are significantly impaired, so the two ends of the funnel also decide to unite. Therefore, the key to the change of this pattern is to create a fair and healthy consumer environment, which requires a combination of food producers



and consumers, to regain government food sovereignty (Borras Jr, 2008; Agarwal, 2014), and rebuild a reasonable food system.

Therefore, the problems caused by the transformation of the food system, which are discussed in this paper, are not only the problem of the consumption structure upgrading caused by the deepening of the market, but also the market-society relations triggered by the market transformation and development, as well as the integration issue of society, culture and ecology (Henderson, 2017). The social self-movements in the food system are responding to the “disembedded” trend in the food market during the transformation (McMichael, 2014).

### 3.2 Three Rural Issues and Counter Movement

The emergence of agricultural products market had triggered profound changes in agriculture and rural areas. In the process of market deepening, there had been a change of peasants in the new subjects. That is to say, the identity of the peasants had been expanded from the contractor, and the identity of participating in food production was given by the government. But in the process, peasants returned to the condition of half-farming half-work. In the new subject, the government began to emphasize social services, and then extended the new agricultural business. This is the process of change and tension.

Around 2000, the fluctuations in the previous stable supply of Chinese food, were mainly reflected in the fluctuations in grain production. The peasants’ production enthusiasm decreased, and the main reasons were the price volatility caused by market deepening, and the rise in cost of production materials. A large number of outflows of production factors have emerged in the rural areas, funds, land and labor rapidly flowing to the urbanization process, and rural areas had experienced decline.

This is the main background for the proposition of the Three Rural Issues. It can be said that the Three Rural Issues are the core issues that arise after the disembedding of food market. After 2004, the Document No. 1 of the Central



Government in 14 consecutive years are focusing on solving this problem, indicating that the Three Rural Issues is a process in which the government tries to systematically solve a series of crises caused by the excessive deepening of the agricultural product market. The government began to re-attempt to conduct policy measures to systematically re-embed the food market into the society. In the process of transformation, the power of the government is playing a leading role.

However, the power of the market has also grown during this period. The solution to the peasant problem seems vague, and the characteristics of the peasant movement are very hidden and scattered. As a result of this transformation, on the one hand, the government has increased its control over the quantity and structure of agricultural products. On the other hand, the deepening of the market has allowed large companies and supermarkets to emerge at the same time. The development background of the latter is to solve the problem of sales caused by the increase in the number of agricultural products. At the same time, for various reasons, the polices ensure the output of food, but does not guarantee the quality of the food.

In the meantime, there are three aspects that worth discussing. The first is the food safety crisis caused by melamine. The second is the Chinese soybean crisis triggered by the accession into the WTO and the discussions on food security and food sovereignty. The third is the environmental crisis and the corresponding new era, and the changes in agricultural production methods.

### 3.3 The Urban and Rural China, and the Sustainable Food System

In the 1940s, Fei Xiaotong proposed the basic characteristics of China in "From the Soil —The Foundations of Chinese Society": Chinese society is based in rural. The concept of "rural China" through the book is a summary of the social characteristics of China for thousands of years. There are at least three connotations: the rural population is the overwhelming majority, the land adhered the peasants' production, and the social life will end in rural.

However, after 1978, the rapid advancement of China's modernization made the three connotations of the rural China, mentioned by Fei Xiaotong, fundamentally changed. Firstly, the rural population no longer accounts for the majority, but the urban of half and rural areas the other. At the end of 2017, the permanent population of urban areas has reached 813 million, accounting for 58.52% of the total population (the urbanization rate of permanent residents), which is more than 40 percentage points higher than 17.9% in 1978. Secondly, peasants' production is no longer relying on land output, but on diversified income. After the transfer of labor population in recent years, 287 million peasants have either worked as "migrant workers" in the cities, or continued to work in coastal areas and become "migrant peasants". This makes agricultural income no longer a major source of income for peasants. Thirdly, social life has become highly mobile, and no longer is where life ends. The migratory-bird life in urban and rural areas, the highly mobility, relatively differentiated rural societies and the special left-behind experience, have made the first generation of migrant workers amphibious in urban and rural areas, from the location in urban to the relocation in rural.

Therefore, we have in fact entered the stage of urban and rural China, which is China's fundamental realities. This will be a major opportunity for China to gradually form a sustainable food system. The fundamental realities behind the formation of the China's food system are undergoing profound changes, from rural China to urban and rural China, which is an important issue that cannot be ignored in the relations in Chinese peasants. From the view of Philip C. Huang 's hidden agricultural revolution, the changes in the production of peasants are not changed by the peasants themselves, but by the of consumption upgrade triggered by changes in fundamental realities.

#### **4. Three Scenes in Counter Movement of Food System**

Marked by the Melamine Incident in 2008, a concentrated outbreak of food safety problems occurs, which has triggered the counter movement in China.

The first phenomenon is based on peasants, and the second on consumers. The former is represented by "One Family Two Systems" (OFTS), and the latter by conducting various forms of alternative food networks (AFNs) in practice.

These two types of scenes are essentially social self-protection movements promoted by the "combination without cooperation" approach. The social self-protection of food safety can be divided into three main stages, individual self-protection by family (individual self-protection) as stage one, collective protection by social interaction network (collective co-protection), and the whole social protection within the food system (social co-protection). There are progressive relations among those three types of behaviors in theory. However, actual observations show that the phenomenon of individual self-protection and collective co-protection exist at the same time, which is a relatively common phenomenon.

The third phenomenon is the improvement of existing food systems by means of national legislation, strategy and administrative supervision. The government began to promote comprehensive treatment, and also adopted various trials such as regulation on sections, varieties and full-scale, as well as the legislative trend of "control by severe punishment". In recent years, the government has also begun to try institutional arrangements with the cooperation connotation of government, market, and media (Zhou Kaiguo, Yang Haisheng, Wu Yinghua, 2016).

#### 4.1 One Family Two Systems: The Power of Self-protection Observed from the Peasants' Perspective

In the process of food system transformation, the emergence of the embedded market society has led to an increasingly serious food safety threat. In this context, Chinese peasants have carried out differentiated production featuring by OFTS.

OFTS is an image of the division of modern food system, with the theoretical basis of Aristotle's indivisibility of householding and money making in

agricultural production. Specifically, when a family conduces money-making production for the market with the logic of capital (A model) (Friedmann, 1993), and also produces householding production for the family with the logic of life (B mode), this household can be called as conducting an OFTS method (Xu Licheng, Zhou Li, Pan Sumei, 2013; Zhou Li, Pan Sumei, Dong Xiaoyu, 2012).

The concept of OFTS provides an effective way of understanding social self-protection under the threat of food safety. In fact, the OFTS phenomenon of Chinese peasants are of objective existence in the history. The characteristics of small peasants, described by Fei Xiaotong, have determined that even in the marketization today, the indivisibility of peasants' production and consumption has not changed. On the one hand, in the era of increasingly industrialized agriculture, peasants' production will be more professional, and food consumption will further depend on the market (A model); but it is undeniable that they will still produce and consume agricultural products (B model).

There are two things to be noted here. First, this distinction essentially corresponds to the characteristic of the indivisibility of production and consumption of peasants. If this characteristic is removed, the meaning of the simultaneous existence of the A and B model will not be understood. Second, this distinction is more on the logical level, which does not mean that peasants must differentiate A and B model in practice, but only indicating the differences in the logic of production and consumption. Only the differentiated behaviors of the household in terms of variety selection, production, marketing and management processes are emphasized, the true meaning of OFTS reveals under the threat of food safety (Peng Jun, Qiao Hui, Zheng Fengtian, 2015).

In reality, the logic of capital for the market money-making production (A model) does trigger the "disembedding" of the market, which in turn puts the society in an environment where food safety issues are highlighted. Polanyi's concept of "double movement" emphasizes the symbiosis between market self-regulation and social self-protection, resulting in both laissez-faire movement that tries to expand the scope of market influence, and also the social protecting double movement that tries to prevent economic "disembedding" (Polanyi, 1944). Therefore, under the threat of food safety, social self-protection in this field will

inevitably be carried out in a variety of forms. The symbol is “individual self-protection” with the aim to put priority to ensure the family can have safe food. Only the existence of OFTS is realized, can we understand the differentiated behavior, that the family may have in variety selection, production, marketing and management processes, is a specific manifestation of social self-protection (Ni Guohua, Zheng Fengtian, Yu Zhijun, 2014). Specifically, to peasants, it is the differentiated behavior in the production and consumption of the B model. When this self-protection is widespread and gradually forms a structural social interaction, it constitutes self-protection at the social level.

Therefore, the concept of OFTS is abstracted from practice. The threat of food safety is the key factor to trigger the difference between A and B models, and is the sufficient and unnecessary condition of OFTS. Once this difference is included, the OFTS can be seen as a family's self-protective response to food security threats. At this moment, OFTS has the meaning of social self-protection.

During the period from June 2014 to October 2017, this paper used stratified sampling method in six areas in China and recovered 848 questionnaires out of 900. Among them, 23 questionnaires were invalid due to incomplete key information, and 827 questionnaires valid, with the effective recovery rate of 91.88%. The detailed sample characteristics are shown in the table 1.

**Table 1 Basic Characteristics of Questionnaire**

	<b>Frequenc y</b>	<b>Rati o</b>	<b>Average Level of China in 2016</b>	<b>Chi- square Statistic</b>	<b>Significa nce Level</b>
<b>Gender</b>				9.261	0.05
<b>Male</b>	605	73.16	51.21		
<b>Female</b>	222	26.84	48.79		
<b>Age</b>				27.718	0.01
<b>18-29</b>	36	4.35	18.17		
<b>30-49</b>	343	41.48	31.72		

<b>50-69</b>	399	48.2 5	23.61		
<b>70-75</b>	48	5.93	3.2		
<b>Family Population</b>				29.268	0.01
<b>1</b>	19	2.30	12.38		
<b>2</b>	85	10.2 8	24.43		
<b>3</b>	143	17.2 9	20.60		
<b>4</b>	216	26.1 2	21.22		
<b>5</b>	164	19.8 3	11.42		
<b>6 and above</b>	200	24.1 8	9.94		
<b>Education Level</b>				8.537	0.05
<b>Primary School and Below</b>	333	40.2 7	31.37		
<b>Middle School</b>	388	46.9 2	53.03		
<b>High School</b>	99	11.9 7	10.01		
<b>College and Above</b>	7	0.85	5.59		
<b>Family Annual Income(Yuan)</b>			12363.4		
<b>&lt;10000</b>	55	6.65			
<b>10000-25000</b>	135	16.3 2			
<b>25001-50000</b>	224	27.0 9			
<b>&gt;50000</b>	413	49.9 4			
<b>Annual Income of</b>			3269.6		

<b>Agriculture(Yuan)</b>					
<b>&lt;5000</b>	176	21.28			
<b>5000-10000</b>	162	19.59			
<b>10001-15000</b>	97	11.73			
<b>&gt;15000</b>	392	47.40			

Note: Data sources for 2016 government level data include 2 channels. Among them: (1) The data of gender, age and family population are from the China Population and Employment Statistics Yearbook 2017. It should be noted that the corresponding age segments are summed up according to the age group of the rural population, and the family population is calculated according to the size of the rural households, which needs to be calculated item by item based on different provinces and areas; (2) The corresponding data of education level, family annual income (yuan/person) and annual income of agriculture (yuan/person) are from the China Rural Statistical Yearbook 2017.

In the questionnaire above, the core issue that the research concerns are the incidence rate of OFTS behavior of peasants. The results show that in the continuous survey of the past five years, at least 62.4% of food producers conducted OFTS behavior, and this proportion is increasing year by year. According to the data surveyed by our research, in December 2015, 56.6% of the 378 households being surveyed accumulatively conducted OFTS. By October 2017, the proportion increased to 62.4%, of the 827 households being surveyed accumulatively. Among the newly added 449 peasant households, 302 households had conducted OFTS, accounting for 67.3%. As a result, the overall proportion increased by 5.8% comparing with in December 2015. Although this is not a rigorous statistical analysis within the same sampling frame, the sampling is performed in the stratified sampling as the design as much as possible. Therefore, it is still reasonable to explain a trend: the phenomenon of OFTS of peasants is common and widespreding.

## 4.2 Alternative Food Networks: The Imported Dynamics in Holistic Perspective

The alternative food networks provide a direct but hidden path for crossing the complex food system. The direct side is that the alternative food networks offers a “peasant-consumer communication” shortcut to ensure “good quality” products with “good price” (Marsden et al., 2000). Under the threat of food safety, producers and consumers gradually and consciously create conditions for direct union, and turn to creating alternative food networks. In this process, consumers get healthy and nutritious food, and producers can ensure a better control over their food. Therefore, both the supply and demand sides conduct transactions by establishing a “relation-based” trust, which enhances the welfare of both parties, and achieves Pareto optimality (Winter, 2003; Hinrichs, 2003)

The hidden aspect is that Chinese alternative food networks, as a B model in the food system, comparing with A model, is with relatively limited consumers involved, and fewer with deep understandings. Considering the huge food demand in China, the impact of the alternative food market is indeed limited. Firstly, peasants are lack of consciousness for alternative food networks. Chinese alternative food networks are driven by the strong willingness of consumption upgrade, while organizations dominated by “real” peasants are only a minority (Si et al., 2015). Secondly, the existing alternative agricultural production organizations are strictly “labor-intensive” agricultural models. It is less competitive than the mainstream agricultural economic organization model in terms of productivity, distribution channels, and financing opportunity costs. Thirdly, in the food system dominated by A model, it is difficult for small producers to obtain more market attention than large agricultural enterprises. It puts the former into a low-level trap of “selling demanding on trust, but hard to gain trust” (Woodhouse, 2010).

However, as the main embodiment of B model, alternative food networks are diversified in forms, and the food safety is the key factor they emphasize. Community Supported Agriculture (CSA), Farmers' Market, and Nested Markets, as representative practices, have already played roles in creating alternative food networks of B model (Papaoikonomou and Ginieis, 2016; Dodds et al., 2014; Feenstra, 1997; Le Velly and Dufeu, 2016). There is an inconsistency in the pursuit



of value among the initiators, producers and consumers of alternative food networks, which contributes to a diversification of alternative food networks in China. By the end of 2017, CSA markets had emerged in nearly 20 provinces and autonomous regions in China. In large and medium cities such as Beijing, Shanghai, Guangzhou, Shenzhen, Nanjing, Chengdu, and Nanning, regular farmer markets have been established.

Among them, the common interests of peasants and consumers in the CSA model have promoted the recovery of the non-intermediary agricultural market (Hinrichs, 2003). The CSA model in China is to establish civic co-operatives in cities, thus achieving effective communication between citizens and peasants (Wen Tiejun, 2009). It is conducive to building a sustainable eco agriculture, and solving the food safety problems caused by the mainstream production mode. With the "peasant-consumer communication", peasants can obtain a greater proportion of income, and even considerable cash flow, and re-determine their control on the production decisions (Xu Licheng and Zhou Li, 2016). At the same time, consumers can get fresh and high-quality agricultural products at reasonable prices, as well as new consuming experiences (Renard, 2003; Raynolds, 2012). This meets the needs of non-productive functions of urban middle-income groups, such as agricultural ecology, environmental protection, natural and healthy (Dong Huan, Zheng Xiaodong, Direction Ming, 2017), reflecting the versatility of agriculture. On this basis, Chinese CSA should draw on international experience, and pay particular attention to several core issues, such as the usage of different labor force with different characteristics; ensuring that farms operate in seasons, and produce local food in the current season; and paying attention to the consumers' specific quantity and quality requirements of food in the community(Nost, 2014); and adapting flexible organizational management while expanding the scale of development(Duncan and Pascucci, 2017).

The Nested Markets can solve the product sales problem for peasants, realize high added value of agricultural products, and help consumers to obtain reliable high-quality agricultural products at relatively low prices (Van der Ploeg et al., 2012; Chen and Scott, 2014). In a deeper sense, the Nested Market is resistant to

an infinite market (Shanin, 1973). In this process, the close relations between peasants and consumers contribute to the interconnection of the achievements of urbanization and the construction of the rural areas, forming an organic interaction that will revitalize the rural, and help to realize the functional reorientation of development of the rural in the process of modernization.

As a type of organization that emphasizes food value the most, Farmers Market plays an important role in stimulating peasants' enthusiasm on high-quality production (Yang Wei and Wang Ximeng, 2017). "Small peasants" is the fundamental aspect of China's agricultural management, and not opposite to the development of the Chinese food system (Chen Xiwen, 2018). Meng Yuxi (2011) believes that the Farmers Market provides a sales platform for "small peasants" engaged in the production of high-end agricultural products, and also a way for consumers with such needs. Therefore, in the study of social self-protection of food systems, relevant discussions must be focused on peasants. Because the vast majority of the 900 million peasants and more than 200 million small peasants will continuously rely on agriculture and rural areas for a long period of time in the future, and the 'half-work and half-farming' family reproduction model based on intergenerational labor division will also exist in the long term (Philip C. Huang, 2016). In the current and future development of China's rural areas, it is still necessary to attach great importance to and deeply explore this basic system and original tradition (Philip C. Huang and Peng Yusheng, 2007; Xu Yong, 2013). Only by establishing the necessary connection between tradition and modernity, can we form a self-protection path for food safety society with Chinese characteristics.

#### 4.3 Government's Legislation and Strategy

First of all, in the government's legislation, and in the process of implementing the Food Safety Law, the government begins to emphasize strengthening the management of production sources, and embodying the principle of social co-governance, which is a new perspective and theoretical basis. It can provide legal

guarantees for social actors in the process of participating in the counter movement.

What's more, in terms of government's strategy, the Rural Revitalization Strategy proposed in 2018 has clearly pointed out the importance of small peasants' production. This is an important direction for the transformation of China's food system. In the development of China's food system, although the "small peasants" was often marginalized, they are important creators of China's economic miracle (Xu Yong, 2010), and they are still the basic production units of rural development in practice. (Ye Jingzhong, 2013; Zhu Qizhen, Lu Xiaochun, 2011). President Xi Jinping made important instructions to Yao Yang's (2017) economics article on the small peasant published in the theoretical version of Beijing Daily, affirming the basic facts of the small peasant economy in China. Judging from the current situation in rural China, the small peasant economy will exist for a long time.

Governments strategy points out that we need to boost agriculture with good quality, and promote small peasants to develop ecological agriculture, and to improve the level of modern agriculture. This is actually an important incentive for peasants to carry out sustainable agricultural production. At the same time, it is also a strategic level response to the escalation of food needs of urban consumers.

## **5. Discussion: China's Development and the Dynamics and Mechanisms of Food System Transformation**

### **5.1 The Power of Counter Movement: The Dance of Three Hands**

China has in fact entered into the era of urban and rural China. In this context, it is of abundant theoretical connotations to discuss the changes of dynamics in the transformation of the government, market and social actors in the food system.

In this discussion, we can establish an axis. The abscissa includes Chinese experience and international experience. The ordinate is inside and outside food system. This framework can review the dynamics of the three main scenes

mentioned above, and discuss the different roles played by the, markets and social actors at different stages, as shown in Figure 1.

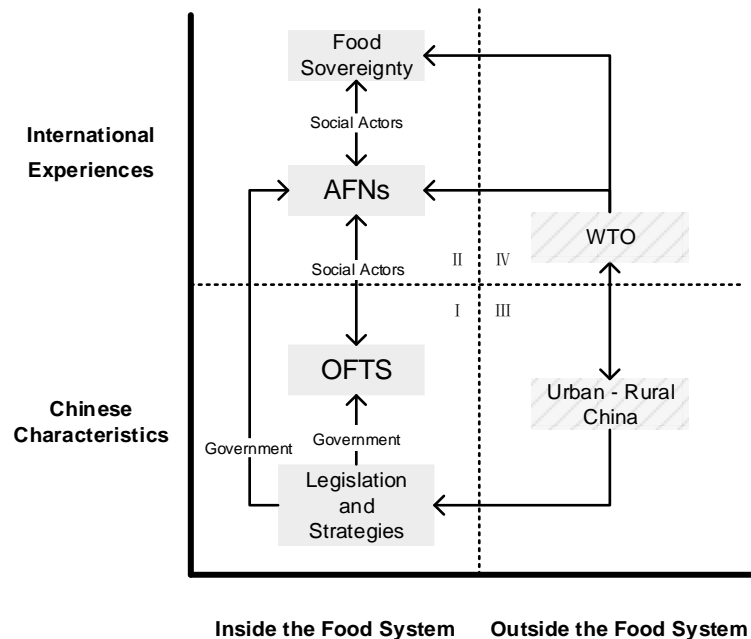


Figure 1 Framework of Dynamics Analysis in Food System Counter Movement

It can be seen that the transformational dynamics of the China's food system are characterized by complexity, stages and interaction.

Its complexity is reflected in the diverse sources of dynamics in the counter movement of the food system. The practice of OFTS is a spontaneous action of Chinese peasants, and also the most direct response to the disembedding of food market, placing in the 1st quadrant. The government has developed a series of laws and national strategies for the disembedding of food systems, also placed in the same quadrant. At the same time, the AFNs, learning and imitating from the mature experience of the food system in Europe and the United States, is introduced to China, can be placed in the second quadrant. Urban and rural China, as a major background outside the food system, is placed in the 3rd quadrant.

The stages are reflected in the fact that in the process of counter movement, social actors first respond to the disembedding of food market, followed by the

government's legislation and strategy formulation. The counter movement formed by those two together, aiming to promote the food market to re-embed.

The interactivity is reflected in the fact that the social actors, formed by peasants and urban consumers, firstly choose OFTS and AFNs for individual self-protection, thereby promoting the government to consider of OFTS and AFNs on the level of legislation and strategy. Urban and rural China, as an important background, provides a huge demand for high-quality food consumption for the sustainable food system transformation process, stimulates the supply of high-quality agricultural products in OFTS, promotes the development of AFNs. At the government level, with the rural revitalization strategy, improve the status and interest distribution of peasant in the production chain, in order to increase the supply of high-quality food.

## 5.2 The Mechanism of Counter Movement: Combination Without Cooperation

When food safety issues pose a serious threat to people, both consumers and producers (peasants) will adopt the OFTS model to protect their own interests. In the field of food safety, the breakage of traditional "social co-protection" mechanism, and the appearance of "self-protection" of peasants and consumers are the two sides of a coin. The emergence, development and expansion of this model are closely related to the market's disembedding and its overriding of the society, the behavior of "uncivilized individual" by peasants and consumers has also played a strong role in it.

When market infringements generally occur, the food market will break Olsen's "Collective Action Dilemma", and achieve "Combination Without Cooperation". This paper needs to expand Olson's theory, arguing that peasants and consumers can break through Olsen's narrow sense of the "Collective Action Dilemma", with the influence of multiple factors, and invariably make the rational choice of the OFTS model, achieving "Combination Without Cooperation", which may be a collective action in a broad sense. The choice of OFTS model is embodied in the use of "weapons of the weak", the "self-interest" pursuit of "self-protection" of food safety, "egoism" and even "uncivilized individual".

Although Olsen demonstrated the impossibility of large-scale collective action, scholars such as Elinor Ostrom critically inherited Olsen's theory of "Collective Action Dilemma", and constructively developed the theory of Common-Pool Resources (CPRs), demonstrated the possibility of small-scale, collective action based on shared resources with borders. The universal practice of "individual self-protection" under OFTS model explores the possibility of breaking Olson's "Collective Action Dilemma" and Ostrom's "small-scale bordered collective action". It is considered that under the specific conditions of the general threat of food safety and the weapon of the weak, a broad, large-scale, scattered and concealed collective action like "Combination Without Cooperation" is possible. Therefore, the collective action dilemma may actually exist. Chinese peasants and consumers have adopted individual self-protection behaviors of OFTS and AFNs. This combination between the two is only superficial and formal, essentially, it is a "Combination Without Cooperation"

Of course, the "Combination Without Cooperation" does not achieve the goal of "social co-protection" in the real sense. From the long-term perspective of social development, this transformation of "individual self-protection" is imperative, and the new "social co-protection" of the food system will be the solution.

## **6. Summery**

This paper is focusing on the process of the food system transformation in China starting from 1978. In the background of marketization and globalization, China's food system is experiencing a great transformation from embedding to disembedding. This transformation leads to crisis of food safety problems and ecological degradation. To cope with those crisis, three sectors, including the government, social actors and the market, carried out a series of counter-movements, striving to re-embed the market into social and natural relations. This paper aims at proposing a producing interpretive framework of the double movement, with disembedding and re-embedding, and provides an

epistemological basis to understand the counter-movements of new government-market relations.

The discussion on the concept of food system transformation is a research review, which begins with the relationship between food and human, then expands to the relationships among market, society and nature. In the process of shaping a new food system, the three sectors use food as a medium to change the relationship between people in the traditional society. The relationship includes 1) the level of food demand structure in production and consumption; 2) The level of food regime on capital and power (Bernstein, 2016; Friedmann and McMichael, 1989); 3) The level of “disembedding” and “re-embedding” in market and society (Polanyi, 1944).

This paper will further discuss the disembedding and re-embedding processes of China's food system starting from the 1980s. a) The existence of the capital-led disembedding mechanism - the demand escalation for food quantity and quality requires government's response with land and market reforms, promoting a further upsurge in the food market, which led to the disembedding process of the market. The new food system established by the transformation, in turn, has re-influenced the relationship between social actors and food, forming the current government of China' food system: disembedding in food market has led to food safety crisis and natural ecological degradation.

b) The emergence of the counter-movements mechanism - social actors, consisting of peasant households and consumers, take the lead to change, government responds with national strategies and legislation, and the market begins to take the initiative in transformation.

Dated from 2013, this research has conducted practical observation and serial studies on Chinese peasant households' behavior of “One Family, Two Systems” (OFTS), consumers' Alternative Food Nets (AFNs) system, and rural revitalization strategy also the legislation and implementation of food safety law of the government. We adopted the method of stratified sampling for 1843 peasants and consumers from six different regions selected in China, and used practical sampling and case studies to conduct the interviews of 134 peasants with

different production scales. The results show, in 2016, 62.4% interviewees were complying with counter-movements.

Based on China's practice, this paper further proposes the core conception of the counter-movements of the food system - Combination Without Cooperation. In the context of disembedding of the food system, social actors, government, and market act as different sectors in food systems, are not completely antagonistic to or separated from each other in their respective goals, but sharing closed relations, and will promote and cooperate with one another, advancing the food system transformation.

It is the combination without cooperation among the sectors that produce a joint force for the counter-movements. For one thing, there is no "institutionalized" cooperation among the sectors, on the contrary, which is of various types of willingness and ability, in the trial of ensuring the safety of food consumption. The lack of structural organization shows the characteristics of slowness and dispersion. For another, the mechanism can "reasonably" promote food safety and ecological protection. Consequently, the joint force of those three sectors will continuously promote the development of counter-movements, and facilitate the market's re-embedding into the society.

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