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Mixed economy with Chinese Characteristics:
Embedding Market Mechanism in a Relational System

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Mixed economy with Chinese Characteristics:
Embedding Market Mechanism in a Relational System

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1. Introduction

Over last three decades, China's economic performance amazed the world. An average annual growth rate of 9% is phenomenal. China's economic success can be traced back to the year 1978 when the Communist Party of China (CPC) decided to pursue a "reform and opening up" policy. The aim of the reform was to shift the focus of the government from ideological struggle to economic development. Through a series of experimentation, both the leadership and ordinary people came to the conclusion that a transition to the market economy was the most effective and efficient way to improve productivity and bring about economic growth. Hence, the great transformation was unveiled. It took China 30 years to grow from a poor country to one of the world's economic superpowers.

China's economic success is admired by the economists for its rapidity, vitality and sustainability. They wonder if China's experience serves barely as a footnote to neoclassical economics, or provides a new account of the market, transition and development. Comparing to Russia's "shock therapy", China's gradualist approach to reform is more pragmatic and so far more successful. But it is apparently in contradiction with the well-acknowledged international best practice demonstrated by the "Washington Consensus", including small government, fast privatization and liberalization and secure property right. In fact, China's experience suggests the contrary: strong government, phased privatization and liberalization and insecure property right. It is highly interesting to economists that China has achieved such a great economic success in spite of the "institutional flaws" that economics textbooks regard as significant hindrance to the smooth operation of market economy. Therefore, China's unprecedented growth and unique development pattern has given rise to many new thoughts that provoked debates over the existing theories as well as the policies derived from such theories. And this dissertation, as one of these struggles, is intent on providing a new account for China's economic transformation and looking for the factors, among others, the institutional factors, essential to the sustainable growth.

In general, three factors explain growth. They are factor accumulation, technological improvement and institutional change. Among these three factors, it is submitted that the most fundamental one is the institution because a good institution provides the incentive to accumulate factors and knowledge. In that sense, China's economic success can only be understood in an institutional perspective. However, China's experience is not a puzzle piece that fits into the framework of the existing institutional theory. A new analytical framework is needed for such studies.

The focus of the new analytical framework is to develop a theory dealing with the rise of market economy, as the most fundamental institutional change that happened to China was the transition towards a market economy. As we know, the market is a free exchange system with the price as a major means to divert the resource to where it generates highest value. This is what Adam Smith terms the "invisible hand", as the

price is not determined by a benevolent and able dictator or a central planning body with incredible computational ability but by demand and supply. According to what Adam Smith presents in his book, the market system is not possibly a human-devised institution, but a spontaneous order emerging from the decentralized activities.

Opposing to the idea of “invisible hand”, Karl Polanyi (1944) argues that the market is not self-regulating in nature. In his remarkable book titled *The Great Transformation*, Karl Polanyi points out that economic activities used to be embedded in the social system and governed by the principles such as re-distribution and reciprocity prior to the rise of the market economy. Afterwards, the modern states pushed a change in social institutions to allow for the rise and preserving of market economy. Indeed, what the modern states had done is engineering an institutional environment to support the operation of impersonal market. As a result, the market is dis-embedded from the social system and reversely dominates the social system. Polanyi’s model shed some lights on the origins of market economy and “market society”, a term which he used to describe contemporary world we are living in.

It is conceivable that both Adam Smith and Karl Polanyi are right. They grasp different aspects of market. Adam Smith focuses on the impersonal aspect of the market that operates in the equilibrium (the metaphor of “invisible hand” shows that the price mechanism has a decentralized nature) while Karl Polanyi pays more attention to the institutional environment surrounding the market. Because the institutional factor is essential to China’s unmatched growth, as mentioned above, Karl Polanyi’s contribution is of importance. The scholars agree without hesitation that China’s economic success is achieved through the re-establishment of the order of the market. What the controversy persists over is how China accomplished the transition to the market economy. Karl Polanyi provides a new perspective to account for what occurred during China’s transition. He distinguishes between two types of market economy. One is the rule-based market economy which invites recurrent investigation in the existing literatures. The other is the relation-based market economy which Karl Polanyi considers as a mode of economy prior to the industrial revolution. At the early stage of its transition, China could not afford to use the “rule of law” system to support the operation of the market. While its culture also favors a cooperation-friendly environment, China turned to seek the institutional underpinning from the relational culture to ensure a smooth transition. The market economy was embedded in the social network resulting in the rise of those so-called “Chinese characteristics”. That is the reason why China’s development strategy differs so sharply from the international best practice.

Thus, the main hypotheses is that Chinese culture and the institutional resources, particularly those in relation to social network, has played an essential role to China’s transition to the market economy. And no less important is that China’s political structure allows an active local institutional innovation as a response to the interaction of emerging market mechanism and changing social environment. Only when the

government finds a right way to deal with the economic transition, which is, in China's case, a trial-and-error method with the evolutionary nature, the available institutional/cultural resources can be diverted to where the market mechanism and surrounding social environment is bridged. If the politics are so structured that no barrier is imposed to the bottom-up private-ordering of market domain, which is obviously cost-saving, and also that a monopolistic structure of market is prevented, the market would probably, as Chinese experience suggests, develop an adaptive structure to smooth the transition and support its operation as a whole as well as in different sectors. This emerging market structure, enabled by the politics and evolving under the informal cultural forces, results ultimately in making a mixed economy with Chinese characteristics, sustaining a long-term growth that the development economics pursues. Therefore, this mixed economy, which integrates the relational culture, adaptive politics and market mechanism, is what this dissertation focuses on, with the hope that one can contribute to the struggle against poverty across the regions all over the world.

It is also interesting to see what will happen to the mixed economy as it faces challenges from inside as well as outside. After China's entry into WTO, Chinese market was further integrated into the world economy. It was a turning point that marked China's entering into the second stage of the transition. During this stage, the market exchange has been showing an inclination towards impersonalization. A transition to the "market society" was initiated accompanied with the increasing requirement of "rule of law". However, the emphasis on "rule of law" would probably not change the mixed nature of Chinese economy. The interaction between original social network and market mechanism is supposed to create a developmental network, which enables a constructive and effective re-embedding of market in the society. Given the main hypotheses of this dissertation, we can summarize the central ideas into the following questions.

1. What kind of social system was the market embedded in during the last decades?
2. Under which circumstances could the market be embedded in the social system?
3. What was the impact of embedded market on the economic transition as well as economic growth?
4. How did the individual sectors perform under an economic system with Chinese characteristics?
5. What is the future perspective of the embedded market?

To deal with these questions, the materials are arranged into ten chapters. The first one is introduction. The second chapter is devoted to a short categorization of the existing literatures on China's economic reform and an introduction of the conceptual framework. Chapter three outlines the characteristics of Chinese cultures and shows how the relation-based culture ensures the economic transactions and preserves the cooperation. Besides, it also compares the relation-based trading system with the rule-based one and addresses the question why Chinese characteristics helped to

stabilize China's transitional economy. Chapter four deals with the role of government. The federalist nature of China's political system enables the application of gradualist strategies like dual-track approach and policy experimentation. It is of importance that the gradualist approach allows for the institutionalization of bottom-up practices, instead of the top-down imposed transition. Chapter five focuses on China's agricultural sector. The household farming was introduced to replace the collective farming. Given the early stage of development of market and the government regulation with respect to the labor and land market, the household farming was the most efficient organizational form of production in the agricultural sector.

Chapter six studies the rural industrialization. In China's rural area, a great number of township and village enterprises (TVEs) emerged to contribute enormously to the overall economic growth. The rise of TVE sector puzzled the scholars because of the collective ownership of TVEs. It suggests that introducing the collectivism into the corporate governance might be an efficient solution to the resource allocation in an underdeveloped as well as regulated market. The rural industrialization is the first stage of development of China's industrial sector. The second stage is the rise of the export sector, which is discussed in chapter seven. Because the relational system was handicapped at stimulating innovation and coordinating production on a big scale and across a wide range, Chinese economy shared the benefit generated from the accumulated knowledge and deep specialization through the so-called "institutional arbitrage" enabled by its integration into the global value chain. Chapter eight is devoted to the financial sector. The informal financial channel played an important role in supporting the private sector. Chapter nine discusses the co-evolution of rule-based and relation-based governance and also draws some lessons from China's economic miracle, both in theoretical and practical sense. Chapter ten concludes.

2. The Main Chinese Literature and the Conceptual Framework

This chapter will first examine the existing literature in relation to China's transformation, which can be categorized into four groups. Following the literature review, a conceptual framework will be introduced in support of the new account of China's economic transformation in this thesis. Apart from the general understandings of institution, the conceptualization also takes into consideration several rarely-used terms such as "embeddedness" and "ideological change".

2.1 Overview of Mainstream Hypotheses

Among the wealth of literature on China's economic reform, economists propose different explanations ranging from factor accumulation, liberalization of market, and rise of migrant workers to export-oriented strategy. The majority of hypotheses focus on specific aspects of Chinese economic reform, which will be reviewed in later chapters. For now, it seems feasible to examine only those conveying a comprehensive understanding of China's economic miracle by categorizing them into four groups. They are "late-developing advantage", "market economy", "government policy" and "revolution from periphery".

The concept of "late-developing advantage" can be traced back to Geschenkron (1962). He advanced the hypothesis to explain the economic take off of late-developers such as Germany and Russia after the Industrial Revolution. Lin (1996, 1999, 2003, 2009) applies the "late-developing advantage" theory to China's economic growth. According to Lin, the economic growth depends on three factors: production factors, structure of production and technological innovation. For a late-developer, a high saving rate is favorable (Lewis, 1954). And China's saving rate was sufficiently high to support the rapid factor accumulation. As to the structure of production, it should be adjusted accordingly when the economy grows. The production factors were shifted from the agricultural sector to the industrial sector to achieve a more efficient allocation of resources and thus improve the overall productivity. Among these three factors, technological innovation determines the production boundary. As suggested by growth theory, the ultimate engine of growth is technological innovation. Lin's concept of technological innovation can be modeled and measured by R&D (research and development) activities. The cost of R&D is prohibitively high and only affordable by the big firms and the government of developed countries. Yet a late-developer could acquire advanced technologies and management skills at a much lower cost through licensing, learning and imitation. In some cases, the imitation was illegal or immoral in the context of modern intellectual property protection. That's why the modernization process of late-developer's industry was always accompanied by the criticisms on its ignorance of intellectual property protection. Yet the hunger for the new technologies diminishes the shame related to the intellectual property malpractice.

Besides the spillover effect of technology, Lin points out that the late-developers always have a comparative advantage in labor cost. Lewis (1954) develops a model to explain the urbanization process with unlimited labor supply. Because of the wage gap between the agricultural and industrial sector, a massive migration from rural to urban area is expected. Accompanied with the urbanization process, the structure of production is also changed and income per capita increases. In China's case, the wage gap across sectors also existed. And due to the increasing size of the market, the inflow of foreign capital and the rising export demand, numerous manufacturing jobs were created to bring about the labor transfer across sectors. The great number of migrant workers shows China's comparative advantage in supplying cheap labor in the world market. On the other side, China's success also owes to the globalization process. The comparative advantage in labor cost, the globalization of world market and the cheap imitation of advanced technologies make China one of world's economic superpower in only three decades. The "late-developing advantage" theory is useful to explain how China succeeds in economic development but it fails to answer the question why China's potential was only unleashed after the reform had been taken place. It is observed that the "late-developing advantage" school only pays attention to the resource constraints faced by developing countries but omits the importance of institutional constraints.

Unlike those who argue for "late-developing advantage" theory, the "market economy" school, among which Wu (2010) was the most determined proponent (he was once called "Market Wu" for his insistence on transition to market), shifts the focus to the institutional constraints. According to the "market economy" school, China's economic success is ascribed to the liberalization of market. Without the free market and secure property right, the prices are not to be formed to direct the resources to where they generate highest value and the incentives not to be provided to the economic actors. Let us go back to the debate over efficiency of central planning and market system during 1930s and 1940s. The economists formed two groups supporting the market and command economy respectively. O. Lange was the representative figure among those who believed in the potential of human-devised computational system. He argued that the central calculation can displace price mechanism in total. In such a system, the task of pricing is assigned to a central planning body. Hayek, as a radical opponent of central planning system, pointed out the weakness of Lange's idea. In the market system, the pricing is a decentralized process drawing on the scattered local information only accessible to individual economic actors. It could not be done by a central calculation body with no access to the local information. Even with all the necessary information available, the central planning bureau is not capable of processing such big stock of information. Hence, the cost of pricing is actually prohibitively high for a centrally-planned economy. And the signal guiding the resource allocation is highly distorted. In addition to the information problem, there is an incentive problem. The public ownership undermined the incentive of individual economic actors to maximize the value of the resources, including the central planning bureau, to which the calculation of prices is

solely a political task but not a profitable business.

Hayek's attack on the centrally planned economy was paid attention to in the policymaking. In line with his theory, China abolished the central planning system and re-introduced market mechanism to determine the resource allocation. And the market force was so impressive that the important role of market was repeatedly mentioned and confirmed in official documents. However, the return to "market economy" is not the complete answer to the puzzle of China's economic miracle. Alongside China, Russia also pursued a transition from command economy to market economy. Compared to China's experimentalist and gradualist approach, Russia sought a big bang in privatization and liberalization. But the result was not as good as expected. It seems that the liberalization of market did not bring much benefit to Russia's economy.

To deal with the problem mentioned above, economists (Qian, Xu, 1993; Qian, Weingast, 1997; Qian, Roland, 1998; Cao, Qian and Weigast, 1999, Jin, Qian and Weingast, 2005) began to study how a nation's political system and reform strategies affects the transition. They are enthusiastic about the comparative analysis of reform strategies across transitional economies, especially the comparison between China's gradualist approach and Russia's shock therapy. Murrell (1993) argues that the shock therapy represents a mechanical view of transition while the gradualist strategy exhibits an evolutionary view of transition. Russia's reform policy is derived from the foreign blueprint while China's is based on the trial and error methods. But it does not mean that Russia should have gone or is able to go China's way. The choice of reform strategy is constrained by the then-existing political system. The dual-track pricing approach and policy experimentation method are policy innovations only possible under China's federalist political system. The policy innovations affect the way that the reform was carried out and thus the effectiveness of the reform. Furthermore, the reform process affects the way that market functions.

However, the policy mentioned above only facilitated the process of institutional innovation but was not the source of innovation. What is innovative at the government level is the method to consolidate innovation, as the policy experimentation method allowed for the institutionalization of bottom-up spontaneous practice. The spontaneous practice was the source of innovation. For example, the household responsibility system originated from the practice in contradiction to policy. Wang and Coase (2013) propose the concept of "revolution from periphery" to describe the institutional innovation started as a trial program in the periphery of the society. These innovations were not intended by the central government but emerged from the interactions among individuals, firms and local governments through an experimental process. Drawing lessons from Russia's failure, the transition to the market economy was too complex a process to be designed comprehensively prior to its implementation. According to the "revolution from periphery" school, the transition should be decentralized and incremental. Given that the governmental

control diminished from center to margin, it is not difficult to find out that the experimental programs were usually started in the periphery of society. As experience in relation to the innovation accumulated, the “revolution from periphery” proceeded to be the national policy.

All these four hypotheses discussed are puzzle pieces that should fit into a large picture. The “late-developing advantage” school shows that China, as a late-developer, had the potential to pursue a rapid growth but fails to explain why the economic performance of the same country are so different before and after reform. The disciples of “market economy” point out that institutions matter. So the key factor of reform is to establish a well-functioning market system. However, the institutional comparative analysis captures the advantage of the market over central plan but lacks the dynamic dimension. It does not address the issue of how the transition was carried out. Some economists pay attention to the role of political system and reform strategy in the transitional economy and find out that the success of reform depends largely on the strategy adopted. Compared to Russia’s shock therapy, China’s gradualist and experimentalist approach led to a more efficient structure of market. But the gradualist strategy is a top-down imposed framework for the reform and institutional innovation. The innovation was actually driven by the bottom-up practices, which was called “revolution from periphery”.

It seems that the picture of China’s economic miracle is so far complete. However, in this picture, the puzzle piece of culture is missing. The majority of literature pays no attention to the role of culture. Yet culture would be the salient institution if it out-competes the formal institution in promoting the economic growth and facilitating the establishment of rules governing market exchange (Herrmann-Pillath, 2016).

2.2 A Conceptual Framework

The concept of institution

To build a solid foundation for institutional studies, economists conceptualize institution from various perspectives. Aoki finds that economists have three different, yet interrelated views of institutions. His formulation draws on a game-theoretic perspective:

“In the analogy of the economic process with a game, economists have regarded an institution as comparable to either players of a game, the rules of a game, or equilibrium strategies of the players in a game. (Aoki, 2001)”

The first view of an institution is supposed to be derived from the conventional use of the word “institution”. For example, the Merriam-Webster dictionary describes institution as “an established organization or corporation (as a bank or a university) especially of a public character”. In short, the institution is referred to as organization.

In the game-theoretic model, an organization is usually treated as a game player. Of course, the organization could also be equilibrium strategy of the game yet only when the game is about the collective action towards the establishment of organization. Obviously this is not the case that the dictionary refers to. For the purpose of this study it is not very useful to adopt the conventional usage of the word “institution”. Instead a reference should be made to the definition given by John Commons (1934), the representative figure of the original school of institutional economics. He defines institution as “collective action in control of individual action”. By collective action he mainly refers to organizations and customs. Though his simultaneous use of actions, organizations and customs makes the definition difficult to understand, the term “collective action” captures the most important feature of the institution. The institution is indeed, if not exactly the same thing as the “collective action”, a solution to the collective action.

The second view of institution is to regard institution as the rule of a game. Douglas North (1990) indicates that institution sets a constraint on human choices. In that sense, institution can be law, social norm, convention, custom, be any rule that regulates human behavior. As the rule of a game, institution is exogenously determined. In a game-theoretic model, the rule of a game is externally given for game players. Viewing the institution as rule is convenient for the cost-benefit analysis of a specific institution. Through institutional comparative analysis, we can examine how strategies and related economic outcomes are affected by different institutions. But it raises the question where rules come from. Is institution man-made, or, as Hayek put it, a spontaneous order? ¹

Challenged by this question, economists form two groups. Some of them are interested in the mechanism design (Hurwicz, 1973, 1987; Hurwicz, Reiter, 2008). Institutions are thought to be outcomes of human design. It is the triumph of the overwhelming reasoning ability of human beings. In fact, the economists have designed various auction mechanisms that work very well. The key point is that the human-devised institution needs to be incentive-compatible. However, the failure of command economy suggests that more problems exist than the incentive problem with respect to the institutional design. For example, the information problem, which might be perfectly solved for the small-scale auction, forms a major obstacle to the large-scale replacement of price signal with central plan. Emerging under the certain conditions that allow active human interactions, institution generally shows behavioral rationality and could turn to be highly irrational when those conditions change significantly.

To understand the institution as a spontaneous order, we need to develop an equilibrium view of institution. The origin of institution-as-equilibrium perspective can be traced back to Hume’s conceptualization of convention². Hume’s account of

1 See Hayek, Friedrich A., *The Fatal Conceit: The Errors of Socialism*, The University of Chicago Press, Chicago, 1991, Page 6

2 See Hume, David, *A Treatise of Human Nature*, New Ed edition, Oxford University Press, Oxford, 2000

convention demonstrates that convention emerges from rational decision made by individual agents without assistance of ex ante agreement or external supervision. He presents the idea with a famous metaphor of rowing boat. The coordination problem arising from rowing boat is not solved by a mutual commitment or a third-party enforcement but the spontaneous synchronization among rowers, which is achieved through unconscious convention. Standing on the shoulder of earlier scholars (Hume, 1738; Lewis, 1969), Schotter (1981) pioneered in developing an equilibrium view of institution. In his path-breaking book, he wrote “We view social institutions not as various sets of rules but as various and alternative standards of behavior that are elements of the equilibrium of the game.” The equilibrium view of institutions provides access to understanding the dynamic of institutional change. As long as the institution is modeled as an endogenous equilibrium, the institutional change can thus be depicted by a shift of equilibrium.

It might be necessary to mention two approaches to model the emergence of the salient institution. They are the evolutionary game approach and repeated game approach. The representative figures of evolutionary game approach are Axelrod (1984), Sugden (1986), Young (1998), Bowles (2006). In evolutionary game approach, institution emerges spontaneously from the interactions of individual agents. Since the evolutionary pressure drives the evolution of institutions, the assumption of perfect rationality would be replaced by the internalization of belief. A good example is the dominance of “tit for tat” strategy over purely selfishness. As the ideological change is also the result of cultural diffusion, it can be modeled in a structure that evolutionary game theory offers. Repeated game approach is popularized by Greif (1989, 1994, 1998, 2006), Milgrom and Roberts (1990; 1992) and Weingast (with Milgrom and North, 1990; 1993, 1995). Repeated game approach is based on the refined concepts of game equilibrium such as sub-game perfect equilibrium. It differs from evolutionary game approach in the assumption of perfect rationality. The individual agent is assumed to be knowledgeable in strategy profiles and to be able to expect the next move of rival-player. Thus, the Pareto-inferior strategy is not ruled out by coercive power but avoided by rational calculation. Greif applies the repeated game approach to study the merchant guild and trade in Mediterranean Europe. He shows that the city governors and merchants abide by the commitment to cooperate under mutually credible threat. Also, by making the game repeat over time, a cooperative strategy could emerge due to a specific structure of interaction. Repeated game approach is proved to be useful in the study of salient institution.

On top of these three views of institution, Aoki (2001) proposes a process view of institution. He views the institution as a process of strategic play involving both behavioral and cognitive dimensions. As he suggests, from the strategic play of individual agents emerge a recursive state of play characterizing the equilibrium. And the features of this equilibrium are summarized in a linguistic or symbolic manner into a so-called “public representation” to give signals to the individual agents. By

perceiving the signals, individual players form beliefs about equilibrium behavior patterns. Simply put, they think they know what others will do in the game. Then they adjust their behaviors in terms of changing strategies. If their behavior converges to the equilibrium behavior pattern, a closed circle is formed. The cognitive perception of the symbolized features of the equilibrium state reinforces players' commitment to the equilibrium strategy. And recursive behavior pattern emerging from the individual playing of the equilibrium strategy exerts an influence on individual cognitive process of belief formation through symbolization. Thus, an institution emerges as a complex process involving the behavioral convergence and belief formation of such convergence. Though the concept is not easy to grasp, it is nevertheless beneficial to view the institution as process if we want to investigate the micro-mechanism of institutional change.

We cannot tell which view of institution is superior. It depends on the purpose and methods of the research. Aoki's process view of institution directs our attention to the cognitive dimension of institution such as expectations and common beliefs and thus helps us to understand the belief formation and change in the dynamic process of institution, which is very important for the analysis of how market economy is embedded in the social system. Such idea is also explored by the economists known as leaders of original institutional economics movement and furthered by the contemporary evolutionary-institutional economists (Veblen, [1904] 2015; Bush, 1987; Elsner, 2012; Elsner et al, 2014).³ This idea will be revisited in later chapters. So far we should bear in mind that the institution, as a complex system involving the interactions at social, behavioral and cognitive level, shows a structured pattern under certain conditions and should undergo a change as long as the underlying environment changes.

The concept of embeddedness

Besides the concept of institution, two further concepts deserve some attention. The first is "embeddedness". In this context "embeddedness" is used to describe China's transition to the so-called mixed economy. So it is of importance to introduce the concept before any analysis is conducted.

As aforementioned, Karl Polanyi pioneered in using the concept to describe the relationship between the economic institution and the entire social system. According to him, the self-regulating market economy is a myth. The economic activities were embedded in the social system and governed by various motives but not only the monetary one. However, the modern state pushed changes in the institutional environment so that the market economy was dis-embedded from the social system and, conversely, dominated the entire society. His insight is profound if we compare his remarks on "market economy" with the rise of "Economics Imperialism", which shows how economics, a knowledge system developed from the practice of modern

³ It was also explored by the original institutional economics as the value warrant and belief system.

economy, penetrates the way of thinking that social scientists and eventually normal people as well should follow. Interestingly, an anthropologist who studies the economic action in the primitive society shares the similar idea with Polanyi. Sahlins (1974) argues that the economic system adapts to the circumstance in a cultural way. And the rationality is not contrary to the culture but a reflection of culture. But the influence of culture is confined to the “stone age economy”. During the process of modernization, a new religion of the market is born.

From a sociological perspective, Granovetter (1985) formulates the concept of embeddedness in a more specific context. He criticizes the over-socialized conception of human action. Social norms and values are considered internalized by a process of socialization (Parsons, 1951). Hence, there is no possibility and necessity for rational calculation in the decision-making. People are obedient to the internalized norms unconsciously as if there is a mental script guiding the behaviors. Contrasting to sociology, the basic assumption of neoclassical economics under-socialized human action. In economic models, the rationality dominates the process of decision-making and the social factors such as internalized norm exert little influence. For example, in a perfectly competitive market, numerous buyers and sellers exchange with each other in an anonymous way. The social relation finds no place in such models because the personal relationship is eliminated by the anonymity and the price contains all the information necessary for the successful exchange. Granovetter suggests that the over-socialized and under-socialized conception of human action both have shortcomings. He argues that the economic action is embedded in the social relations and draws on a study of labor market to support his hypothesis.

In fact, the real question is not if the market economy is embedded in the social system or not, but in which social/institutional system the market economy is embedded. The so-called “market society” can be viewed as that the market system is embedded in a “rule-of-law” environment. The rule-of-law system was developed to ensure the smooth functioning of the impersonal market. However, the enormous global growth created the impression that the economic issue had been centered in the human society (actually it had been) and the market economy became seemingly self-regulating (in fact not the case). The fact is that the market economy is underpinned by a “rule-of-law” system.

The literature review suggests that embeddedness involves a complex interaction among market, state and society. As shown by figure 2.1, the state is between market and society determining how the market is embedded in the social system. In Polanyi’s model, the market society is an outcome of state planning. The government policies can change the way how market interacts with society. But it also faces the so-called social counter-movement, which sometimes minimizes the effect of such policies. In the figure, the market takes the core position, which means that the market is not self-preserving. It requires an institutional foundation which can only be provided by the society. And the outer circle is the society. It stabilizes the entire

system by embedding the market and counter-effecting the radical changes.

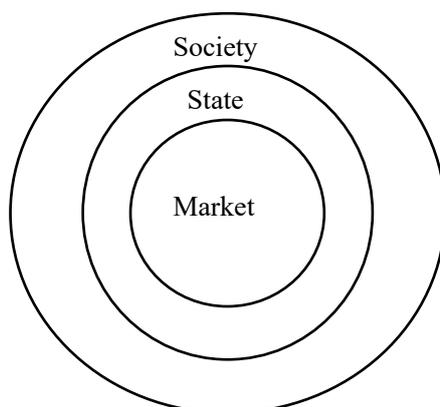


Figure 2.1 The embedding of market in the society

With respect to China's transition, in a lack of rule-of-law tradition, the Chinese market economy was embedded in the relation-based culture. As Granovetter points out, the economic action is more or less affected by the social relation, even in a developed capitalist economy. But in China's case, the social network provided a comprehensive solution to the information transmission, transaction security and contract enforcement. The personal relationship did not only affect the economic action as being complementary to the formal institution but replaced it to a remarkable degree. Moreover, the state adopted a experimentalist strategy and thus allowed the local institutional innovation, which provided an good environment for the embedded market. With the informal institution underpinning the market system from bottom up, China's transition resulted in the miracle growth.

The ideological change

In recent years, economists become aware of the role of ideology in the institutional change. Among them, North addresses the importance of ideology in solving free-riding problem. Bromley (1989) argues that the institutional change is caused by the expectation of a preferred future state over the status quo. The concept of ideology also appears in the literature of transitional economy and economic history. Yao (2008) incorporates the ideological factors into a bounded-rationality-based model to analyze the implementation of the privatization policy. McCloskey (2007, 2011, 2016) claims that the industrial revolution was actually caused by the change of the attitude towards merchant class and business activity, reflected in the change of rhetoric.

All these literatures suggest that the ideology matters, particularly for the institutional change. But what is ideology? It is helpful to define ideology in a broader sense as well as in a neutral way. For current purposes, the term of ideology is used to refer to a set of believes and values shared by a group of people. If we adopt the equilibrium view of institution, ideology and institution are different things. The ideology

concerns the ideas in mind and the institution is demonstrated by the patterns in behavior. If we refer to Aoki's process view of institution, the common belief shared among the participants is an important component of the institutional dynamic. As mentioned above, some evolutionary-institutional economists (Bush, 1987; Elsner, 2012) developing and furthering original institutional economics also holds the similar opinions on the role of value warrant and belief system in the institutional dynamic. For those institutions emerging from the reciprocal behaviors, the lacking of the common belief would directly result in the collapse of the entire system. Apart from the institutions sustained by the mutual commitment, the institution relying on the third-party enforcement is also affected by the common belief. If the participants do not expect punishment from third party or expect that other participants would not appeal to the third party, the institution would not be very effective. So in whatever sense, the ideological aspect of institution should be one of our focuses in the current study if we want to understand the institution accurately.

Also, the belief formation and change is important to the institutional change. The ideology is to be changed when there is inconsistency between the experience and expectation. If what people believe is not found supported in reality, suspicion arises. Thus the ideological change may trigger the comprehensive transition. The most difficult part of the institutional change is how to coordinate the expectation of individual participants. Even if the shift to the new institution is beneficial to the entire group of participants, the individual is not ready to change his behavior pattern if he expects that others will stick to the tradition. So, the ideological change, and the value change as well, must take place alongside with the institutional change. A sufficiently large fraction of population must be under the influence of the new ideas and values.

China's great transformation was accompanied with the ideological change. If the interpretation of market were not liberalized in the early stage of the reform, the reform would not be carried out that far. Step by step, the perception of market has been changed among the policymakers and the ordinary people. The market was considered, at the beginning of the reform, a resource allocation mechanism complementary to the central plan, and then a major mechanism, and now the fundamental one. And so did private ownership and other basic concepts in relation to market economy. Since the ideology was so important when it comes to the embedding of market exchange in the culture or the transition from relation-based to mixed form of governance, the concept will be further examined in later chapters.

2.3 Summary and Implications for Further Studies

This chapter prepares for the analysis of China's case in two steps. First, the literature is explored under four groups of hypotheses. All four schools present valid points to certain extent but the understanding can be always deepened and furthered. The late developing advantage explains why China accumulated factors and knowledge at an

unprecedented rate. The scholars emphasizing the role of market economy point out that establishing the market system is prerequisite to the realization of the late developing advantage. But the transition to market economy was then a question. The perspective from political system and reform strategy is offered to comprehend the gradualist and experimentalist nature of China's transition, which is key to the success of the institutional change. Yet the source of the institutional innovation could not be found in the government side but in the periphery of society. China's institutional innovation process drew on the local knowledge and trial-and-error-based experimental practice so that it was vital and sustainable.

To further the analysis, an analytical framework from an "embeddedness" perspective is developed. The gist is that the market economy is embedded in a relation-based culture. The local institutional innovation is actually the innovation emerging from the interaction between the market and the culture (culture can be modeled as games on networks). That will be mainly discussed in the next chapter.

Before any further analysis, there are several important concepts that should be clarified. First of all, since China's great transformation is a sort of institutional change in nature, the conceptualization of institution is necessary. Of the four views of institution mentioned, three find application in analyze. In addition, the concepts of "embeddedness" and "ideology", which are old theme of original institutional economics, also have their roles in this new context. The "embeddedness" approach constitutes the perspective from which the new account of China's transition is developed and the "ideology" matters to the institutional substitution.

3. The Relational Culture and Relation-based Exchange System

The aim of the socialist revolution is to reform the society thoroughly and develop the ideal model of human society out of the old, decaying order. So it requires “the capture of political power of the nation by the working class as opposed to the capitalist class (Thompson, 1903)”. For a developed country, the major task is to abolish the capitalist institution as soon as the working class occupies the political stage. But in China’s case, as the market was underdeveloped, the social revolution also aimed at the traditional culture. With the old culture being removed from social life, the vital, diversified and organic society was turned into a silent and mechanical block. Eventually the society was about to proceed to the destruction. Lingered on the edge of collapse, the Party decided to reorient the policy system towards a pragmatic perspective and shifted the focus from social revolution to economic construction. Thus the transition to the market economy was initiated.

However, the situation demonstrated by Polanyi did not appear. According to Polanyi, in order to develop the market into a state of “self-regulating”, those modern state introduce a “rule of law” system to govern the market transaction. ⁴But China lacked the experience of rule-based governance. Moreover, the “rule of law” system could be too expensive for a small-sized market. So in its early stage of development, Chinese market sought a different foundation. And this foundation, as mentioned, was the traditional culture that the socialist revolution tended to eradicate but failed to do so. The relation-based culture underpinned the top-down imposed market system from bottom up. But it is not to say that other institutional resources such as “Mao’s legacy” were of no importance at all. For example, the Party’s organizational resources were highly important for the culture to penetrate the local economic system. And the federalist nature of China’s political system helped to develop a relation-based trading system by enabling the local institutional innovation, which will be discussed in the next chapter.

This “rule of relation” approach is normal in most of the less developed economies. As we know, one aim of the society is to enable cooperation. And cooperation requires trust among the cooperators. Obviously, the blood tie and geographical relationship minimize the cost of developing trust. However, the growing market requires the trust on an increasingly larger scale and wider range, i.e. the trust among strangers. So the rule-based governance is introduced to enable the massive cooperation. But in China’s great transformation, the market economy was largely governed by the relation-based culture. It reveals that the relation-based governance might be an effective institution even when what we face is a big economy in transition. So it is worth to discuss the advantage and disadvantage of relation-based governance with respect to a huge economy at various development stages.

⁴ The Anglo-American concept of the rule of law can be compared with the concept of “Rechtsstaat” in German jurisprudence. It is thought that the continental concept pays more attention to just than the Anglo-American one.

With a focus on the relation-based culture and the trading system based on it, this chapter is divided into three parts. The first part outlines some salient features of Chinese culture and shows that Chinese culture is largely relation-centered. The second part theorizes the mechanism through which personal relationships sustain cooperation. Part three is a comparative institutional analysis comparing the “rule of law” and the “rule of relation” systems.

3.1 Some Features of Chinese Culture

Two ideas of Confucianism

China is an old country but the reform it undertakes is new. The old culture is revived in the modern market economy. As we know, Confucianism is the most influential philosophical thinking in ancient China. It also exerted significant influence on East Asian countries like Japan, Korea, Vietnam and Singapore. It might not be a coincidence that recent economic miracles occurred mostly in the East Asian, in the Confucian cultural sphere. It seems that the “rule of relation” culture shaped a market-preserving institutional environment.

Two ideas embedded in the Confucianism provoke interest relating to the current research. First one is its emphasis on the social relation and the rights and responsibilities attached to it. Confucius stressed the importance of social relation and specified the rights and obligations across a variety of relationships. The major attention is devoted to the kinship. And the norms governing the kinship structure are also extended to be applied to the relationship between friends and between the superiors and subordinates. To develop and maintain the relationship, trust must be formed among family members, clan members, friends and colleagues (mostly referring to the colleagues in government departments). Apparently, Chinese society is based on the interwoven relationships. And Confucianism imposes a set of rules prescribing the behavior pattern for the specific relationships. Hence, as long as Confucianism constitutes the salient cultural belief, the trust can be formed and maintained within the specific relationships. If an individual in such a society does not fulfill the obligations imposed by one of his relationships, he receives the punishment in one way or another.

The other idea is about the reciprocity. Confucian philosophy asserts that Ren (human-heartedness) and Yi (righteousness) are two major virtues that people should pursue. The fundamental idea of Ren is “loving others”. This love is not the love that God bestows upon people with equality, but arises due to human empathy. Confucius said, “Do not do to others what you do not wish yourself” and⁵

⁵ Kant’s reciprocity thesis on Morality and Freedom shows the similar conclusion. See Allison, Henry E., *Kant’s Theory of Freedom*, Cambridge University Press, Cambridge, 1990.

The man of Ren is one who, desiring to sustain himself, sustains others, and desiring to develop himself, develops others. To be able from one's own self to draw a parallel for the treatment of others; that may be called the way to practice Ren.

Here, as Fei points out, “Confucius paid a lot of attention to the word tui (pushing or extending out), in the sense of ripples expanding out from the center.”⁶ “One must love himself to be able to love his family members, thus to be able to love the friends and companies. It is also emphasized by Confucius in his Analects, “Attaining control over one's inner self, one then can tui, can extend oneself out into other circles of human relationships.”⁷ Thus empathy is the emotional foundation for practicing Ren. However, Ren is not purely altruistic but reciprocal. Confucius agrees that improper action has to be punished and goodness has to be rewarded by goodness. The teaching of Confucius suggests a behavior pattern of tit-for-tat. It is not a strategy of cooperating unconditionally or cheating forever, but a way in between. A way in between is the way of Confucius.

Confucianism is the symbolization, conceptualization and summarization of the fundamental features of Chinese culture which reflects the behavior patterns emerging from the adaptation to the agricultural society and its environment. In Aoki's dynamic model of institution, Confucianism is what could be termed “public presentation” of the adaptive institution and also delivers the signals continuously to reinforce the common belief so as to sustain the adaptive institution. So the studies of Confucianism could capture the essentials of Chinese culture. Digging into the Confucianism, we encounter the very nature of the Chinese society, that is, the relation-based structure and the principle of reciprocity underpinning that structure.

The differential mode of association

As aforementioned, in Chinese society, the relation-based social system is structured as the ripples extending from inner to outer circle.⁸ Fei summarizes this ripples-shaped structure as the “differential mode of association”. In contrast to Chinese societal system, Western society is, however, patterned by the “organizational mode of association”. A neat demonstration of the “differential mode of association” can be found in the foreword to Fei's book *From the Soil*:

With differential mode of association, the society is composed not of discrete organizations but of overlapping networks of people linked together through

⁶ Fei, Xiaotong, *From the Soil: The Foundations of Chinese Society (Xiangtu Zhongguo)*, translated by Gary G. Hamilton and Wang Zheng, University of California Press, Oakland, 1992, Page 66

⁷ Ibid, Page 59

⁸ In Mo-tzu, a classic book of Mohism, a dialogue between Wu ma zi, a Confucian scholar, and Mo Tzu who advocates “all-embracing love” is reported as follows: “I cannot practice all-embracing love. I love the men of Tsou (a nearby state) better than I love those of Yueh (a distant state). I love the men of Lu (his own state) more than I love those of Tsou. I love the men of my own district better than I love those of Lu. I love the members of my own clan better than I love those of my own district. I love my parents better than I love the men of my own clan. And I love myself better than I love my parents.”

*differentially categorized social relationships.*⁹

In the traditional Chinese society, numerous different, yet interrelated and overlapped social networks were developed to meet the requirements of social governance. One striking feature of the social webs is that the social capital attached to the relationship diminished as the network expands outwards. The trust cannot be maintained if the frequency of interaction becomes low. So the relationship in the inner circle of the social network is close and generates sufficient trust to ensure long-term cooperation. In contrast, the relationship in the outer circle of the social network might not provide sufficient incentive to sustain the cooperation particularly in the case that a big amount of benefit is expected to be generated from the cooperation. The reason that the social network is ripples-shaped lies in the scarcity of resources spent on the cultivation of relationship. It is impossible to establish tight relationships among the entire population. So, the investment will be made to those relationships that have already been established or are less costly to be established and maintained. The close relationship will get closer due to this self-reinforcing effect.

There is one more feature worth mentioning. As Fei put it:

*A society with a differential mode of association is composed of webs woven out of countless personal relationships. To each knot in these webs is attached a specific ethical principle. For this reason, the traditional moral system was incapable of producing a comprehensive moral concept.*¹⁰

In Chinese society, it used to be the case that the laws and norms were specified for the relationship involved. For example, in the ancient Chinese law, a father convicted of killing his son was free from punishment, but he could not escape the punishment for his killing of a stranger. Hence, Chinese society developed a segregated structure. The ripples-shaped character of social network resulted in the distinction between insider and outsider. It is no problem that the cooperation is sustained among insiders. But the cooperation between insider and outsider seems difficult and uncertain. Compared with the relational society, in an organization-based social system, the equality before the rules is sought by the entire membership of the organization. And the interpersonal trust, as a means to sustain the cooperation, is replaced with the commonly agreed coercive measures. So it could afford to coordinate an ever-big cooperative network.

Family and Clan

The inner circle of social network, as important as it is for the formation of social order, should be institutionalized and has been institutionalized into the family. The family is the basic organizational unit in a relational society. Despite this label of an

⁹ Ibid, Page 20

¹⁰ Ibid, Page 78

organizational unit, the family is not an organization in terms of modern organizational law. The family is based on the blood tie and conjugal relationship, in which the rights and obligations are vaguely defined. By contrast, the modern organization, among others the firms, required a more precise formulation of rights and obligations of members. An explicit contract often sets the foundation of the modern organization. However, at the core of the family as an institution exists only an implicit contract which is largely embedded in the culture. Due to the vague, yet flexible nature of the implicit contract, the family is a versatile institution performing the functions such as household, collective production, social insurance and finance. Therefore, if the market is underdeveloped and thus cannot afford to maintain a high level of specialization, the family comes to play various roles in market transaction without introducing additional transaction cost. As shown by China's experience, the household farming and household-run establishments were important elements of China's economy particularly during the early stage of the development.

One shortcoming of the institution of family is scale. Thus Chinese society developed a ripples-shaped structure to extend the trust network, at least from family to clan. Human brotherhood minimizes the transaction cost but seems to be a dream. Actually, the hostile attitude to strangers increases the survival chance in the ancient world but prevents the further development in the modern world. In view of the increasing benefit of cooperation, the clan offers a solution to facilitate greater cooperation. The clan is an enlarged family. Indeed, the ideal model of government demonstrated by Confucianism is to treat the nation as an enlarged family. However, the Legalism triumphed over the Confucianism as to the influence on the political practice. As a result, the feudalism had been replaced by the centralized governance system. But in the countryside, the society was organized the way following the Confucian thoughts. The Confucian model of government was applicable because it was too costly for the empire to administer the village's activities through the hierarchical bureaucratic system. Hence, the clan played a crucial role to stabilize the social structure from bottom up.

As mentioned above, the family was too small to carry out the large project efficiently by itself. So there was a need to coordinate the provision of public goods such as irrigation systems, roads, education and even dispute resolution. The clan, as the enlarged family, took the responsibility to coordinate the public projects. The recurrent interactions ensured the continuous cooperation among clan members. The expansion of network served not only to increase the quantities of public goods to the efficient level but also to enable the further division of labor and the embedding of financial activities in the social relations. In agriculture, the institution of family could solve most problems in relation to the production. Yet industrialization required a significant amount of investment and the employment of a considerable number of workers. So the clan should play an increasingly important role in coordinating the industrial production. As shown by the practice, the collective TVEs and family business benefited a lot from the cohesiveness of the clan.

It is interesting to compare the societal organization across cultures. Greif and Tabellini (2010) examine the bifurcation in social institution of pre-modern Chinese and Europe. They argue that different societal organizations, for China the clan and for Europe the city, play relevant roles in sustaining the cooperation. The clan is kinship-based, be it actual or perceived kinship, and sustained by moral norms, whereas the city is rule-based and relies on the third-party enforcement. Greif's analysis shed some light on how culture interacts with the economic system. Under the influence of its culture, the Chinese economy ended up in a segregated structure while the Western economy proceeded to an integrated structure, to be discussed below.

Contractual relationship vs. relational contract

As suggested by the differential mode of association, the inner circle of social network is governed by the principle of reciprocity, whereas the outer circle indicates an inclination towards the impersonal transaction. China, relying on agriculture most of the time during its long history, confined the development of social institution within the limits of the inner circle of social network. That was the origin of relational culture, which is more other-regarding and embodies the principle of equality, as contrary to the individualistic feature of Western culture.

However, the cultural bifurcation does not necessarily suggest the different natures and qualities across human races. In his two great books *The Wealth of Nations* and *The Theory of Moral Sentiments*, Adam Smith regards the human nature as being self-interest as well as other-regarding.¹¹ These two contradictory views of human nature can be reconciled by making them context-dependent. Vernon Smith (2007) differentiates between the personalized exchange and the extended order of market. The personalized exchange involves acquaintance and recurrent interaction. In this kind of social context, the contract underlying the transaction is regarded as a relational contract. The relational contract differs from the formal contract in two aspects. First, the relational contract is vaguely formulated and highly flexible. In an environment full of uncertainty, the ex ante agreement is replaced with the ex post negotiation as long as the cost of re-negotiation is sufficiently low. And the tight relationship minimizes the cost of re-negotiation as well as the risk of hold-up behavior. To gain a full understanding, we shall move to the second aspect. The relational contract is not enforced by a third-party but by the mutual commitment. Three mechanisms are supposed to contribute: the reciprocity, reputation and interlinked social domains, which will be discussed in the next part. Besides, the internalization of social norms also helps to sustain the cooperation. The social norms

¹¹ See Smith, Adam, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776, recent edition, Random House, New York, 1994; Smith, Adam, *A Theory of Moral Sentiments*, 1759, recent edition, Penguin Classics, New York, 2010

are presentations of adaptive behavior pattern so that it is efficient to follow the social norm without applying rational calculation if the environment is not changing.

As to the extended order of market, the anonymity of market exchange requires institutionalization of contractual relationship and an external sanction system to enforce it. A well-received definition of contract is as follows: “A contract is an agreement having a lawful object entered into voluntarily by two or more parties, each of whom intends to create one or more legal obligations between them.”¹² Hence, a contractual relationship is a legal relationship. It exists only within a legal framework, being created under and defined by the law. In fact, it is a re-construction of inter-personal relationships by eradicating the uncertain part and specifying the right and obligation in relation to the object involved. In order to be enforceable by third party, also in favor of the cooperation in the context of specialization, the formal contract must be precisely formulated and also confined to a limited object.

Collectivist culture

It is observed that Chinese society is characterized by collectivism while Western culture tends to be individualistic. It may be surprising that from the relation-based social structure emerged a collectivist culture. The relational culture seems to offer a lot of freedom to the individuals as it solely demonstrates several vaguely defined guidelines for the society. But if we study the culture more carefully, it turns out that the tightly interwoven social ties offer little freedom to the participants. The lacking of freedom should contribute to the emergence of the collectivist culture.

First, unlike the contractual relationship that is free to enter and exit, most of the valuable personal relationship is predetermined. It is not free for people to choose their relatives and countrymen. And it is also very difficult for people to withdraw from the ongoing relationship because they can hardly move into a new relationship and will be punished for the betrayal.

Second, the individualistic culture shows an inclination towards “explicit rules”. In an individualistic society, the social norms are mostly institutionalized into formal rules. Only when a person violates the institutionalized rules will he be punished. In that sense, the individualistic culture is anti-culture. By contrast, the relational culture favors the “implicit rules”. These informal rules govern most aspects of social exchange acting like an “invisible hand” to grasp the entire society. Since the social activity is always embedded in the relation, the informal rules also comes as attached to the relationship. Besides, the asymmetry of power in the relationship might result in the rise of the authoritarianism.

Hence, the collectivist culture dominates a relational society. The individuals serve the collective interest at their own expense. Actually, they do it because they try to

¹² It is a definition widely used by the law firms. See <http://www.hitchenslaw.com/contracts/>

avoid punishment or generate benefit in the future. The extensive social network encourages people to reciprocate the seemingly altruistic activities and cooperate in the collective action. It is merely a way to coordinate the cooperation away from the rule-based approach.

The table below conveniently summarizes some of the different characteristics of Chinese and Western culture.

	China	Western Countries
Dominating philosophy and religion	Confucianism	Christian Religion
Social governance	Relation-based	Rule-based
Societal organization	Clan	City
Enforcement Mechanism	Self-enforcement	Third-party enforcement
Culture	Collectivist culture	Individualistic culture

Table 3.1 Different characteristics of Chinese and Western culture

As shown in Table 3.1, Confucianism defines the characteristics of Chinese mentality while Christianity exerts the fundamental influence on Western mindset. The major thoughts of Confucianism constitute the “public presentation” of the relation-based institution. Therefore, as Confucianism suggests, the relational society develops a ripples-shaped structure (differential mode of association) based on the principle of reciprocity. Moreover, in a relational society, the clan plays a fundamental role in coordinating the cooperation compared to the role of the city in Western social system. The people act according to their predetermined position in various interrelated and overlapping social networks as if they are driven by a collectivist culture. It is immaterial whether they really believe in the collectivism so long as their behavior conforms to such norms. Thus far it is clear that the Chinese society is governed by the social relation. Yet, why is the social network an effective means to preserve the cooperation? It seems difficult to enforce the contract in an environment absent of authorized third-party coercion. There must be a self-enforcement mechanism with respect to the relational contract.

3.2 The Social Network as a Cooperation-preserving Mechanism

The rule-based trading system requires the institutionalization of the third-party punishment. Now the question is how can the transaction be ensured without the external coercion. Three mechanisms emerge from the networked environment and they preserve the cooperation in such environment. These three mechanisms are direct reciprocity, indirect reciprocity (reputation) and interlinked interaction across social domains.

Direct reciprocity

In a world where people are self-interested and the institution of third-party enforcement is not available, exchange is threatened by treachery and betrayal. For example, a person takes the good without paying. In doing so, he maximizes his own income and do harm to the trading partner. And the partner who predicts his defective behavior gives up the opportunity to trade with him. Both of them are rational, but rational action results in the mutually undesirable outcome. The most famous example is the prisoner's dilemma. It is a "start point" for the transitional economy. And the aim of transition is to move out of the "start point" and establish an efficient economic order.

Direct reciprocity is supposed to be the oldest and also one of the most efficient solutions to the prisoner's dilemma. It is a guideline for the social interaction among human beings. Its core idea is that of "you scratch my back and I'll scratch yours". I do you a favor in the expectation that you will help me in the future. Correspondingly, you are ready to reciprocate the favor when you accept the help. The principle of reciprocity finds application only when the interaction occurs recurrently between two parties. The difference between the one-shot game and repeated game is that the later one involves the future income which provides the incentive to cooperate and enables the punishment for non-cooperative behaviors. If an individual player defects in the game of exchange, his trading partner would probably terminate the cooperative relationship and stop playing exchange game with him. Therefore, the player must be aware that the cost of defection is the current value of the entire future income. The punishment for the defection is much harsher compared with that in a one-shot game. So, when market exchange is embedded in a long-term social relation, future income is taken into consideration in the strategic calculation so that the prison's dilemma is transformed into a cooperative equilibrium.

A basic model suffices to show how reciprocity fosters the cooperation in an infinitely repeated game. We start with a typical prisoner's dilemma with a structure of $d > a > c > b$ and then extend the one-shot game to be a repeated one.

	cooperate	defect
cooperate	(a, a)	(b, d)
defect	(d, b)	(c, c)



	cooperate	defect
cooperate	(a/σ , a/σ)	(b, d)
defect	(d, b)	(c, c)

Figure 3.2 The repeated game as a solution to the prisoner’s dilemma

σ denotes the discount rate. Now, the benefit generated from cooperation increases substantially compared to that in a one-shot game. We assume that the players lack information and play each strategy with 50%. Hence, if $a/\sigma + b - c > d$ holds, the expected payoff of cooperation is higher than that of defection and the strategy combination (a/σ , a/σ) would be the new equilibrium. However, as the game is extended over time, it is possible that a player tries to take advantage by defecting in one round and resuming the cooperation in next round. To avoid being exploited by the opponent, the player has to reciprocate the opponent’s defection with the defective strategy. So the law of action in this game is “to do what the other player does”. You should always cooperate at first. In the next rounds of the game, if the opponent cooperates, you cooperate; if the opponent defects, you defect. It is called “tit for tat”, a strategic form of reciprocity. Judging from the result, the prevalence of reciprocity fosters the cooperation. As Ken Binmore (2005) put it, the reciprocity is the glue that holds human societies together.¹³

However, the glue is sometimes not so effective. To keep the glue effective, first of all, the discount rate should not be high. A high discount rate reduces the current value of the entire future income and thus undermines the effectiveness of punishment, unless the player is going to punish the defector at additional cost. It is what scholars (Fehr et al, 2002; Bowles and Gintis, 2000) called strong reciprocity. Not everyone needs to be the strong reciprocator. A certain share of strong reciprocators in the population ensures the cooperation. It is not rational for an individual to be a strong reciprocator. However, to have a certain share of strong reciprocators in the population is ecologically rational. In other words, it is an adaptive strategy in the evolutionary

¹³ See Binmore, Ken, *Natural Justice*, The MIT Press, Cambridge, 2005

stable equilibrium.

Second, the game should be infinitely repeated. That means players don't know which round is the end of the game. If they do, then the strategy combination (defect, defect) would be a sub-game perfect equilibrium. If the game has an end, it is rational for an individual player to defect at last round of game. And the other player expects that he would defect at last round and defects pre-emptively at the second last round, and so on and so forth. A game of finite rounds is similar to a one-shot game. Both of them result in the prisoner's dilemma. To presume an infinitely repeated game does not only serve the theoretical interest, but also finds application in the practice. In the real world, social relation is inheritable. A person's social relation is his offspring's resource. Especially in a relational society like China, a person's success relies not only on the tangible wealth inherited from his parents but also the intangible social relations established by his parents. It is not surprising that sociologists regard social relations as a kind of social capital. Consequently, it is safe to assume that the game is played over generations.

Third, the cooperative equilibrium should be a salient one. The principle of reciprocity helps to preserve the cooperation when cooperation is expected from both sides. But it does not help to cause a shift in equilibrium when players are trapped in the defective equilibrium. In a repeated game-theoretic model, it is beyond player's capacity to shift from one equilibrium to another. To understand the dynamic of shift in equilibrium, we have to view the interaction among players as a competition of survival. Hence, the evolutionary game theory will provide a better analytical tool. The individual

al player is presumed to be influenced by the culture and internalize the social norms. So it is habitual for him to choose a specific strategy whatever his opponent plays. The assumption of absolute rationality is relaxed and the role of culture is introduced into the model, with the strategy being treated as the cultural trait. In an evolutionary game-theoretic model, different cultural traits compete for prevalence. For example, we can assume that a population comprises cooperators, defectors and reciprocators. Cooperator always cooperates, defector always defects and reciprocator goes with "tit for tat". And we'll find that reciprocators, under certain condition, can invade the group of defectors and go flourish in equilibrium. So, as the evolutionary game-theoretic model suggests, the cooperation can emerge from an environment full of cheaters.¹⁴

It is worth mentioning that biology also offers theories and empirical studies in relation to reciprocity. Hamilton (1964a, 1964b) develops the "inclusive fitness" theory to explain the cooperation among the creatures that are biological related. Moreover, Trivers (1971) proposes the concept of "reciprocal altruism" to explain the

¹⁴ The equilibrium can be a dynamic one because cooperators outcompete reciprocators and defectors outcompete cooperators.

evolution of cooperation. His concept of “reciprocal altruism” is close to the “tit for tat” strategy introduced by Anatol Rapoport.¹⁵ “Reciprocal altruist” stops cooperation when opponent defects. “Tit for tat” replicates the opponent’s previous action and can restore cooperation even when the cooperation has been once broken down. In the model formulated above, “reciprocal altruism” is equivalent to the “tit for tat”. Once trapped in defective equilibrium, there is no possibility to restore the cooperation. But if forgiveness or forgetfulness is introduced in the model, these two forms of reciprocity will make a difference.

Indirect reciprocity

The direct reciprocity only fosters the cooperation between the trading parties. The indirect reciprocity holds the entire social network together. It is based on human’s ability to memorize experience of exchange and transmit the information within the social network. As a result, participants of the same social network share a reputation system. The reputation determines if a person is trustworthy with respect to the market transaction. By delivering the signal throughout the social network, the reputation system enables the collective punishment and thus decreases the incentive to cheat. In order to gain more trade opportunity, a person must be prudent with his reputation and try to avoid any improper action that can undermine the reputation. In the theoretical model, we will see that even the minimum use of reputation is of importance to the cooperation. An individual player only needs to know opponents’ strategy in the last round. If opponent cooperates in last round, he can be labeled with the identity of cooperator. But if he defects in last round, he is considered a defector. The strategy of the players is to trade with cooperators and avoid defectors (in the behavior sense).

To analyze the effect of reputation, it is helpful to shift from a repeated game-theoretic model to an evolutionary one for two reasons. First, the reputation is sufficient to ensure the cooperation even when the repeated nature is removed from the model; second, it illustrate how culture affects the cooperation. We start with a fitness structure as follows:

	cooperate	defect
cooperate	(a, a)	(b, d)
defect	(d, b)	(c, c)

Figure 3.3 The fitness structure in an evolutionary game-theoretic model

Assume that there is a population comprising reciprocators and defectors.

¹⁵ See Axelrod, Robert, *The Evolution of Cooperation*, revised edition, Basic book, New York, 2006

Reciprocators account for λ percent of the population, and defectors $1-\lambda$. The behavioral pattern is generically determined and does not involve morality. The payoff matrix is given above. But the concept of income is replaced by the concept of fitness which measure the reproduction rate of phenotypes. We assume that an individual player encounters an opponent randomly and the game lasts only for one round. Given the assumptions, the expected fitness of reciprocators is $\lambda a+(1-\lambda)b$ while the expected fitness of defectors is $\lambda d+(1-\lambda)c$. Therefore, the condition under which the reciprocation is a superior genetic feature is:

$$\lambda a+(1-\lambda)b > \lambda d+(1-\lambda)c$$

And it can be rewritten as:

$$\lambda < (c-b)/((a+c)-(b+d))$$

The condition does not hold when the game is a simple prisoner's dilemma with $d > a > c > b$.

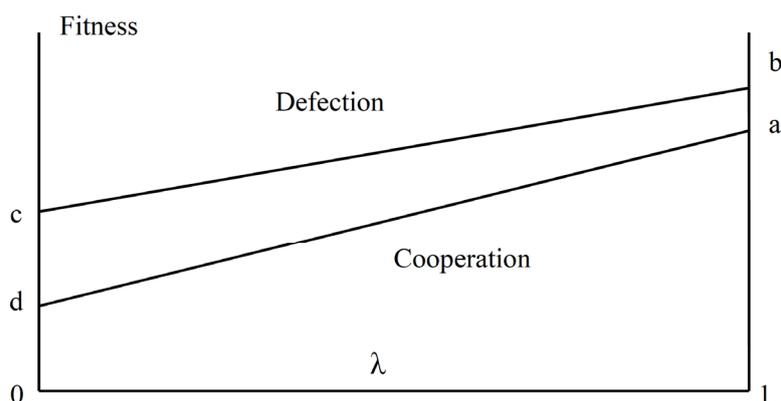


Figure 3.4 The fitness structure in a prisoner's dilemma

The Figure shows that direct reciprocity cannot overcome the problem of defection in one-shot game.¹⁶ The average fitness of defectors is higher than that of reciprocators. If we assume the game is repeated for n rounds, the fitness structure is as follows:

¹⁶ For more details please look at Thomas Schelling's remarkable work, *Micromotives and Macrobehavior*, Norton, New York, 1978.

	cooperate	Defect
cooperate	(na, na)	(d+(n-1)c, b+(n-1)c)
defect	(b+(n-1)c, d+(n-1)c)	(nc, nc)

Figure 3.5 The fitness structure in a n-rounds game

The condition is transformed to be (discount rate is not taken into consideration):

$$\lambda > (c-d)/(n(a-c)-(b+d)+2c)$$

Hence, in the repeated game, reciprocators dominate the population if the rounds of game exceed the threshold value:

$$n > (b-c)/(a-c)$$

If the game is played over more than $(b-c)/(a-c)$ rounds, the cultural trait “reciprocity” is definitely advantageous over the “defection”. The reason is that cooperation, once established, can be sustained for more than one round while defection would be punished by defection at the rest but first rounds of game. Therefore, the more rounds the game lasts for, the higher is the average fitness for reciprocators. With the increase in repeated rounds of the game, the game is transformed from the prisoner’s dilemma to a cooperative game (Axelrod, 1984; Schelling, 1978; Sigmund, 1993).

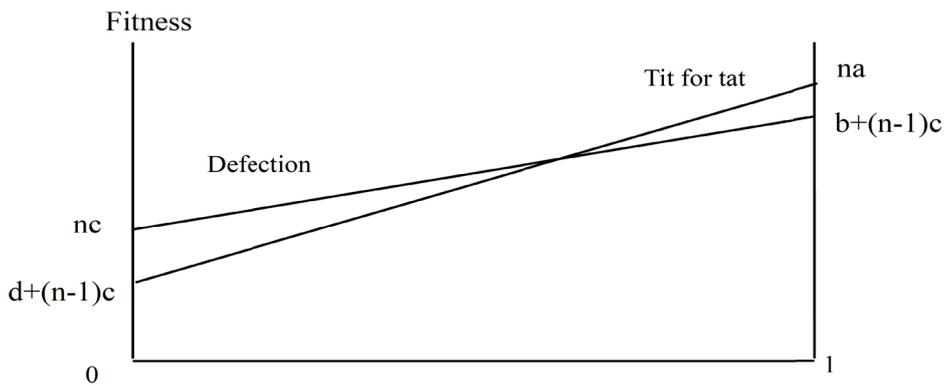


Figure 3.6 The fitness structure in a repeated game

The evolutionary game-theoretic model tells us that the direct reciprocity only plays a relevant role in the repeated game. The conclusion resembles that of the model based on super-rationality. But there is a difference. The later model requires that the interaction should be infinitely repeated while the former only requires that the game should be played over certain rounds. So, interestingly, if we presume the bounded

rationality instead of super-rationality, the cooperation is easier to attain. It shows that the constructivist rationality (super-rationality) is used for only the short-term decision-making while the ecological rationality (bounded rationality) is essential to the understanding of the long-term prevalence of customs, social norms and cultures. To establish a relationship with someone or not is a job assigned to the rationality. Yet the prevalence of reciprocating strategy must be the outcome of interaction among a large population over a long time span.

This demonstrates that the prevalence of reciprocating strategy among the population in a bounded-rationality-based model. The aim is to lay a foundation for understanding the role of reputation in fostering cooperation. The core idea of indirect reciprocity is that of “you scratch my back and others who know that you scratch my back will scratch your back”. Obviously the key factor that enables the indirect reciprocity is information transmission. An individual expecting one good deed deserves another must firstly convince others that he is a reciprocator. Social relation provides a good information channel and helps to establish a reputation system.

However, the model above assumes that the player cannot change the opponent he plays with for at least n rounds. It is not quite problematic for those who establish the cooperative relationship with the opponents because playing with a new opponent cannot improve the average benefit. But if a player encounters a defector at the first round of game, he may probably seek a new partner. Now reputation is introduced into the model while the players are allowed to change the opponent every round. First, as assumed in the model above, the population comprises reciprocators and defectors. Reciprocators account for λ ($0 \leq \lambda \leq 1$) of population and defectors $1 - \lambda$. According to the assumption, reciprocators meet reciprocators with possibility λ^2 , and meet defectors with possibility $\lambda(1 - \lambda)$. Defectors meet defectors with possibility $(1 - \lambda)^2$. Players meet each other randomly at beginning of every round of game. They can choose to play or change the opponent. The fitness structure is similar to that of a prisoner’s dilemma.

	reciprocate	defect
reciprocate	(a, a)	(d, b)
defect	(b, d)	(c, c)

Figure 3.7 The fitness structure of the model with reputation

To be a prisoner’s dilemma, the fitness structure needs to be $b > a > c > d$. Because the game is not repeatedly played by the same players, the direct reciprocity loses the efficacy of the glue. The indirect reciprocity comes to play a role. Those defectors who meet reciprocators in the game would be labeled and remembered forever. Their cultural traits become known to others. As a result, reciprocators punish defectors

collectively in the way that they avoid defectors in the game of exchange. The reputation of individual players delivers sufficient information to influence the pattern of interaction. And also those hidden defectors avoid playing with the known defectors, because it is more profitable to play with an unknown player than with a defector. So, at next rounds of game, $\lambda(1-\lambda)$ of population is excluded from the game. They may go extinct or they just live in a totally isolated group.

Due to the exclusion of the known defectors, the players that move to the next round of game are reciprocators and hidden defectors. And at the end of this round of game, the group of reciprocators and hidden defectors grows at the rate of $\alpha(a, d)$ and $\beta(b, c)$. The growth rate is determined by the expected fitness of players. The expected fitness of a reciprocator is $\lambda_t a + (1 - \lambda_t) d$ while the expected fitness of a defector is $\lambda_t b + (1 - \lambda_t) c$. λ_t denotes the share of reciprocators in the population at the round t of the game. So, the reproduction rate of defectors is always higher than that of the reciprocators.

In sum, there are two balancing forces for replication dynamics. On one hand, the exclusion of the known defectors increases the return for cooperation; on the other hand, the higher growth rate of hidden defectors reduces the return for cooperation. So, the equilibrium is reached when the equation $\lambda_t = \lambda^*$ holds. And λ^* is determined by the following equation:

$$\lambda^* \alpha^* / (\lambda^* \alpha^* + (1 - \lambda^*)^2 \beta^*) = \lambda^*$$

By solving the equation, we have three equilibrium values. They are $\lambda^* = 1$; $\lambda^* = 0$; $\lambda^* = (\beta^* - \alpha^*) / \beta^*$. Nowak (2006) conducts a similar analysis. A similar figure can be used here to illustrate the equilibrium.

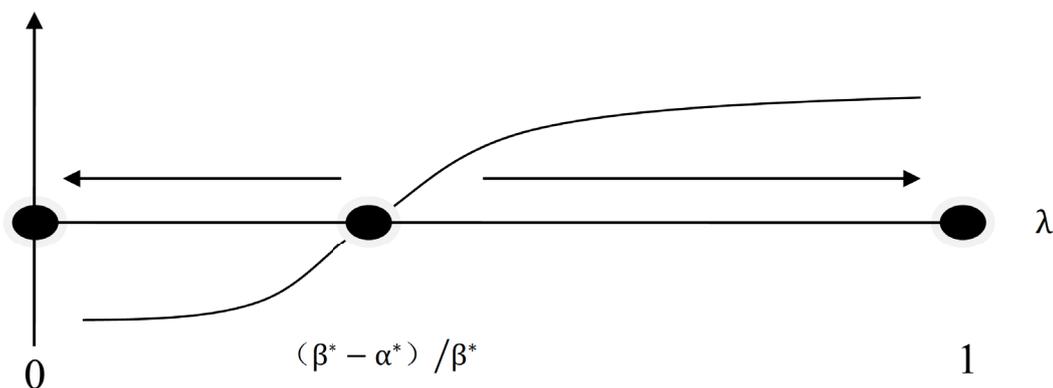


Figure 3.8 The equilibriums of the evolutionary model

$\lambda^* = 1$ and $\lambda^* = 0$ are stable equilibriums. In the case that a specific phenotype has dominated the population, the invasion of other phenotype is impossible. If defectors dominate the population, the reputation is of little use. The size of group of reciprocators is too small so that only a small fraction of defectors can be recognized.

If reciprocators go flourish, the newly arrived defectors would be labeled and removed from the game as soon as possible. However, $\lambda^* = (\beta^* - \alpha^*) / \beta^*$ is not stable. A slight deviation from this equilibrium would lead to a shift towards two other equilibriums. As shown by the figure, if an external shock makes λ^* slightly smaller than $(\beta^* - \alpha^*) / \beta^*$, $\lambda^* = 0$ is the new equilibrium. And if the shock makes λ^* slightly larger than $(\beta^* - \alpha^*) / \beta^*$, $\lambda^* = 1$ is the new equilibrium. Hence, $(\beta^* - \alpha^*) / \beta^*$ is the threshold share of reciprocators in the population. The share of reciprocators in the population needs to exceed $(\beta^* - \alpha^*) / \beta^*$ to ensure the domination of cooperation.

The aim of the model is to show that the cooperation is attained in the presence of inter-personal communication. Through communication, the reputation system is established enabling the collective punishment of improper actions and thus enhancing the cooperation-preserving feature of the reciprocal culture. If the replication rate of the reciprocal culture is close to that of the defective culture, the former proceeds to dominate the human mentalities, as is the case in Chinese society. That is the major contribution of this model to the understanding of reciprocity as the glue holding human society together.

However, this model is purely theoretical and makes some unrealistic assumptions. The unrealistic part of the model lies in assuming interaction between randomly matched players and real-time communication among the entire population. Hence, it is possible to revise the model accordingly to approximate the real world. First, the social relation can be introduced into the model to decrease the frequency of random matching. In the original model, only the defector is branded and only the known defector can be avoided in the transaction. However, there are plenty of reasons that the reciprocator should also be branded. An individual player who plays with a reciprocator sees no reason to change the opponent in the future. What they would probably do is to develop a long-term cooperative relationship. Introducing the social relation in the model allows individual players to decide whether they want to continue playing with the same opponent or prefer to change the opponent. And there is only one situation by which a pair of players would mutually agree to continue playing with each other. It is the situation of reciprocator-meeting-reciprocator. A pair of reciprocators are incentivized to develop a long-term relationship because their expected fitness is improved to be "a" for the rest rounds of the game, whereas the expected fitness of a reciprocator searching for a reliable opponent is $\lambda_t a + (1 - \lambda_t)d$. If we assume that the social relation is inheritable, the reciprocators would certainly dominate the population. But we also find that all the relationships are stable over time and the room for searching and matching disappear.

The second point is that communication is costly. So communication only occurs when it generates sufficient benefit. The best strategy is to communicate actively within a group, but not with the entire population. If we confine the interactions to a middle-sized group, a two-layer structure emerges. At the first layer, the story unfolds as the one discussed above. Whether the reciprocal culture or defective culture dominates depends on the initial condition of share of reciprocator and defector in the individual group. At the second layer, the selection act to the level of the group. It favors the reciprocal culture over the defective culture. Let us assume a city occupied by the defectors like Sodom and Gomorrah. A city of that sort would probably be destroyed by the city governed by the reciprocators because the latter benefits enormously from cooperation. So, under selection pressure, the reciprocal culture improves the average fitness and thus triumphs over the defective culture. However, if the group grows into a big one and is no longer efficient in distributing information, the defective culture can invade. So, in the equilibrium, there exist some middle-sized groups or networks. And the intra-group interactions and communications are more frequent than the inter-group interactions and communications.

Interlinked interactions across social domains

Reciprocity emerges due to the time extension of interactions while the indirect reciprocity is enabled by the spatial extension of interactions. There is one more extension, the domain extension, to be addressed. Aoki (2001) points out that an individual may interact with the opponent across various social domains. Using an example of constructing irrigation system from feudal Japan, he shows that linking the social exchange game with the public good game provides a solution to the free-rider problem intrinsic to the provision of public good. In his book on China's transition, Wang (2009) demonstrates a similar idea arguing that various sorts of transaction occur between the same trading parties particularly in the small-sized market. As we may notice, the emergence of various social domains is the result of functional differentiation of modern society. The specialization is one of the sources of functional differentiation. An emerging market cannot afford the transaction cost caused by the specialization. Thus the social relation comes as an informal institution to ensure the market transaction. However, one result of adopting the "rule of relation" system, eventually a goal as well, is that most economic activities are embedded in the social relation. And it is economical to embed as many transactions as possible in an individual relationship. As a result, it is easy to link different sorts of transaction between two players or within a group. It has an advantage that the incentive to defect in one game would be undermined due to the mix-up of payoffs of two or more different games.

The idea is best explicated with two examples. The first example is an interlinked game, as mentioned, consisting of the components of social exchange and public goods provision. The players engage in the social exchange with each other and

contribute to the public goods provision collectively. If one is resident in a densely populated city, it is highly possible that social exchange and public goods provision are two games independent from each other. One can always choose whatever the best strategy is for one game without considering the effect of his choice on the playing of the second game. To maximize the utility, he would be decent in the social exchange and immoral as to the public goods provision, by which I mean he contributes less to the public goods provision as required. So in a city, a third party is demanded to impose the tax on the inhabitants to finance the public goods provision. However, in a small village, the player who attempts to escape the obligation to contribute to public goods provision, to which he is incentivized, would be threatened by the collective punishment in the social exchange domain. He could even be expelled from the village. In this model, the social relation provides an intermediary to link different games and enables the collective punishment across social domains.

Furthermore, as the second example will suggest, social relation also enables information channeling. Allowing information to flow across two games may affect player's strategy and thus the emerging equilibrium in the individual games. A good example can be found in the rural sector. Assume that a landlord and a tenant play two games in sequence. At stage one, the landlord and the tenant cooperate in the farming and share the income according to the ratio of marginal return to land and that to labor. At stage two, to raise his child, the tenant borrows a loan from the landlord. The landlord agrees to lend him money because he knows the tenant's ability to repay the loan. He acquires the information from the cooperation with the tenant in the production domain, and makes use of the information in the financial domain. If these two games are independent, the tenant cooperates with the landlord in farming and borrows a loan from the bank. Then his application for the loan would probably be turned down because the bank requires the information verifiable for a third party, for example the real estate documents, to assess the tenant's repaying ability. But the tenant is not able to provide such information and thus has no access to formal financial system. It was very common that private firms and household-run establishments could not get the credit from the bank. As a result, an informal financial system emerged to meet the financial demand of private sectors.

This part shows how social relation preserves the cooperation in the absence of any authoritative third-party. The reciprocity, reputation and interlinked interaction across social domains are three major cooperation-preserving mechanisms enabled by the social network. However, though it is not very costly to embed the economic activities in the social relation due to the prevailing common belief in the culture, the scale and scope of the cooperation would be limited by the segregated nature of social network when the market grows continuously.

3.3 A Theory of Relation-based Exchange System

This last part investigates the cooperation-preserving nature of the social network.

Then the remaining questions are how the market transaction is embedded in the social network and what advantages the “rule of relation” system may enjoy over the “rule of law” system. This part is devoted to address both questions, which are intrinsically related to each other.

The relation-based trading system

The market transaction can be broken down into three stages, namely, the matching, contracting and enforcing stage. If one of these stages involves prohibitively high transaction cost, then the market fails. In that sense, the aim of embedding the market transaction in an institutional environment is to minimize the transaction cost. It is pertinent to investigate how social relation affects these three stages of market transaction and its role in the minimization of transaction cost. Furthermore, in the analysis, the “rule of law” system makes an alternative institution compared to the “rule of relation” system with respect to the economical way to preserve the cooperation.

First, because the market is a free trade system, it is necessary to make the buyer meet seller or the transaction would never occur. This is the matching process. In an impersonal market, the way to solve matching problem is to render some of market participants specialized in processing market information. They perform the function of the market intermediaries to search for the potential demand and supply and match them. For example, some consulting firms search outsourcing vendors for IT firms. Headhunting firms are active in the human resource market. Market makers match buyers and sellers in the security market. So the matching problem can be solved by the specialization of intermediaries in processing information. Such specialization reduces the information cost substantially, therefore making the matching mechanism an affordable burden for all market participants. But the story does not end here. There must be a third-party to verify the information provided by those market intermediaries, even though competition should eradicate most of motivations to cheat. As for a “rule of law” system, the rules regulating the market activities are codified and enacted by the legislative bodies. The violation of laws causes punishment from the judicial authority. Moreover, the government is also entitled to supervise and regulate market activities in relation to information processing.

However, for a “rule of relation” system, the specialization is not a mainstream solution to the matching problem. One fallacy of the economic theory is the assumption of self-organizing market (Bowles, 2004). Walrasian equilibrium is neutral to institution. In such an equilibrium, the market system requires no supporting institutions and operates independently. In fact, the perfect market illustrates an ideal state that only exists in the thought experiment. The institution that market is embedded in has virtually effect on how the decentralized coordination is achieved. As to the matching part of market process, the rule of relational system offers a different solution which requires the social relation to perform the function of

information intermediary. Two significant features of the social relation must be taken into consideration. The more distant one's information source is from him, the more one must pay for to get this information. Moreover, the reliability of information diminishes with the increase of distance between information source and information consumer because the marginal cost of establishing and maintaining relationship increases with the expansion of one's social network. The increase of marginal cost means the diminishing return to the investment in a relationship. Hence, "the differential mode of association" emerges. One may trust the information sources in the inner circle of social network but consider the information sources in the outer circle of social network less reliable, because the cost of lying to an acquaintance is much higher than doing the same thing to a stranger.

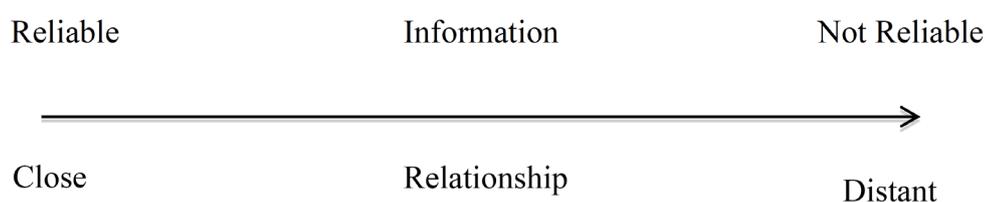


Figure 3.9 The reliability of information sources decreases with the distance of relationship

So, a market participant who searches for a trading partner through the social network faces a problem of constrained choice set. Where advanced communication and transportation technology is not available, most of information is generated and exchanged within the social network. In that case, the scope of social network defines the outer limits of the search area. Consequently, for a market participant who takes the social network as the definite information source, the possibility to match with the most beneficial trading partner is lower. There are two kinds of approach to the creation and distribution of market information. The first one is the market approach, which means that, in an impersonal market economy, resources are directed to the "information sector". The second one is the relational way. In a relational system, a market participant develops the social network to accomplish a similar goal. Hence, the "rule of law" system may out-compete the "rule of relation" system with respect to the efficiency of matching mechanism if the market is sufficiently large.

There is another problem regarding the matching process. As mentioned above, the investment is not made to develop a new relationship but rather made to strengthen an existing relationship because the cost of switching from the ongoing relationship to a seemingly more profitable, yet less reliable one is quite high. As a result, the relationship is stable over time. It is not necessary to search for new trading partners and any effort to search for new market opportunities might be taken as an offensive act so as to undermine the ongoing relationship. In that regard, in a networked environment, the searching and matching mechanism will not develop fully. And the efficiency of information processing is not as high as that in an economy with high

level of specialization. But the spending on the creation and distribution of market information is significantly saved. This low-cost-low-output setting is proper to a small-sized market.

Following the matching stage is the contracting stage. At this stage, the contractual terms governing the future transactions, rights and obligations in relation to the specific issues are to be formulated. But the future is uncertain. As Hart (1995) argues, the contract is incomplete for it cannot deal with the uncertainty with detailed formulations. The incompleteness of contract gives rise to the problem of efficient contracting. To understand this problem, we distinguish among three kinds of information: private information, observable information and verifiable information (Dixit, 2004; Li, 2003). Private information is only accessible to the person who produces the information. Observable information refers to the information which can be observed only by the people involved. For example, if two trading parties only have an oral contract, then the content of contract can be categorized as observable information as no third party can verify the existence and authenticity of such information. Finally, the verifiable information refers to the information accessible to a third-party. For example, where a signed written contract is required to be uploaded to the Internet by a trading authority, then the contractual relationship between two trading parties is the verifiable information for all Internet users.

In a relational system, the contract is not intended for third party enforcement. The market participants seek enforcement on the basis of the mutual agreement. Hence, the effort to ensure the verifiability of the information is saved. There is no need to formulate numerous detailed terms. Accordingly, the relational contract is “light” in content. A considerable amount of relational contract even takes an oral form. Taking into consideration the potentially enormous cost of contract formulation, reflected by for example the income of law firms therein, a relational economy, by making use of observable information efficiently, avoids developing a highly complex system to address the formulation of contract.

What Kester (1992) writes on the Japanese economy is an excellent demonstration of the relational contract:

In Japan, supply contracts are established by a ‘basic agreement,’ which is a short (often only three or four pages), written document that is little more than a legal ‘boilerplate’ stipulating that the supplier and assembler are entering into a commercial relationship, will operate on a basis of mutual respect for each other’s autonomy, and will endeavor in good faith to maintain an atmosphere of mutual trust in their business dealings.... Japanese contracts often do not even state definitely the transactions at stake so as not to restrict the flexibility considered necessary to modify the supply agreement over time [p. 28]. In America, you have many rules [to govern business transactions]. Here in Japan, everything is very fluid. There may be rules, but they are constantly changing to suit the environment . . . The overall benefits of an

*ongoing relationship is what really matters.*¹⁷

Chinese contracts often share similar features with their Japanese counterparts. Still, there is one more question. If the contract is informal and basic, how can people deal with the uncertainty? In fact, in the relational economy, the re-negotiation *ex post* replaces the formulation *ex ante*. Facing the uncertainty, they prefer the re-negotiation over an exhaustive formulation. There are two reasons behind such a preference. The first is the stability of the relationship. As aforementioned, once a relationship is established, it is not easily broken down. One must consider the cost of replacing the old relationship with a new one. And he must take the reputation damage into consideration if the termination of a relationship is viewed as an immoral act. It is always the case to associate social convention with morality. As long as the relationship is hard to break, the possibility that the re-negotiation fails is low.

It is worth noting that the trust generated from the long-term business relationship is also a sort of capital in the economy governed by the rules. For example, compared to the commodity purchase contract, the service contract prefers the long-term structure. Hence, the master service contract is reached between parties to permit the quick negotiation of future transactions. The informal contract, with fewer terms than the master contract, represents an extreme case that provides an operations platform solely on the basis of trust.

The second reason is also related to the moral dimension of the contractual relationship. According to the Chinese culture, any intention to formulate a detailed contract contains distrust in it. The effort to pre-delineate the rights and obligations in relation to the subject of contract turns out to be a negative act to destroy the foundation of relational contract. As Kester (1992) points out, the parties enter into an informal contract on the basis of mutual trust. If the trust vanishes, the informal contract is dissolved. So people prefer a basic agreement or even an oral agreement as long as they want to maintain a long-term cooperation.

The third stage of a market transaction is the enforcement. In the modern world, the delivery of commodity and payment may not happen at the same moment due to the increasing market size. And it leads to the enforcement problem threatening the further growth of market for the security of transaction is a prerequisite to the market exchange. However, a contract is not self-enforcing. A contract is either enforced by a third-party whose authority over enforcement is accepted overall or by the social relation that ties the trading parties together.

¹⁷ See Kester, W. Carl, *Industrial Groups as Systems of Contractual Governance*, *Oxford Review of Economic Policy*, Vol. 8, No. 3, 1992, Page 30; See also Li, John Shuhe, *Relation-based versus Rule-based Governance: An Explanation of the East Asian Miracle and Asian Crisis*, *Review of International Economics*, Volume 11, Issue 4, September 2003, pages 651–673,

Let us compare between these two different enforcement mechanisms. The third-party punishment mechanism is also based on the idea of specialization. In a society governed by the formal rules, a fraction of total labor force is trained into legal professionals and engages to make and practice laws. On the contrary, the “rule of relation” system is based on the idea of embedding the enforcement in the relation. Thus, in a relation-based governance system, the enforcement mechanism is not a public good but relies on the mutual trust. Hence, the cost structure of these two mechanisms is totally different. And this difference explains partially the smooth embedment of an emerging market in the relational system and the superior performance of the impersonal market economy compared to the relational economy.

As Li (2003) points out, the rule-based governance involves high fixed cost and low marginal cost. First, the establishment and maintenance of a legal system is costly. The market system is not a free lunch. As mentioned, a considerable number of people need to be specialized in law-making, policing and dispute resolution. And the opportunity cost of the human resources diverted to the “legal sector” should also include the educational cost. Law schools are formed to provide the legal training and they also need to employ staff to offer courses. Only through education is the human capital produced to sustain the operation of the “legal sector”. Hence, the third-party punishment system involves significant cost. The market needs to be sufficiently large to afford the cost of third party enforcement.

Two kinds of cost need to be distinguished here. The legal system performs a dual function of a signal-giver and a dispute-solver. As a signal-giver, the legal system is formed to attract the attentions of market participants to the punishment against improper acts. Upon the signal delivered by the existence of a legal system, the common expectation is formed and reinforced. The signal-giving function is what Aoki called the “public presentation” of the institution. One striking feature of signal is the non-rivalry with respect to the consumption. So the cost of establishing a legal system is not associated with the size of population that it plans to influence. In that sense, a large share of the cost that the third party enforcement system involves is fixed cost.

The second role of the legal system is the dispute-solver, which involves the positive marginal cost. Dispute resolution is not a non-rivalrous service. It means that the amount of resources that a legal system demands increases when the economy grows. For example, the number of disputes increases when more transaction takes place. So more jobs in relation to legal issues will be created. However, the “legal sector” benefits from specialization so that the cost increases at a lower rate compared to the overall growth rate of the economy featuring constant return to scale. Hence, as Li argues, the marginal cost of the legal services is low and, if not decreasing, at least constant. So, the legal system, playing the role of a signal-giver and a dispute-solver, features a high fixed cost and a low marginal cost. Hence, the average cost of using a legal system declines when the market grows.

Contrary to the rule-based governance, the relation-based governance involves high marginal cost and low fixed cost. There is no formal institution declaring the essential role of a social relation. The common belief of social relation is preserved in the culture. Therefore, the “public presentation” of the informal institution is made in the form of culture. Culture, once it exists, involves little cost to maintain its further existence. Hence, it is not costly to form the common expectation that sanction is imposed on improper acts through the social relation. The cultural belief suffices to ensure the stability of the relation-based trading system. Hence the conclusion that the relational system involves little fixed cost.

However, unlike the “rule of law” system, the common belief of social relation alone cannot ensure the contract enforcement and the transaction security. In addition to the belief, the personal relationship must be developed to carry out such functions. The effectiveness of the relation-based governance depends largely on the quantity and quality of the personal relationship established. Hence, a lot of resources are used to establish, develop, cultivate and strengthen the personal relationships. These resources flow into a ritual system to accomplish the goal through the ritualization of social exchange. At first glance, the Chinese gift exchange tradition is wasteful and non-productive at first glance. For example, moon cakes are popular gifts among relatives and friends. But a lot of moon cakes would never be consumed but serve merely as an intermediary of showing kindness. Such gifts are essential to the operation of the social network because the relationship should be continuously reinforced by the ritual actions. Also, the over-consumption of liquor in formal dinners seems to be irrational but is a ritual that helps to establish tight personal relationships. And the relationship features the diminishing return because the relationship is a means to promote the cooperation but not to generate products itself. Hence, the relational economy develops a specific structure to minimize the effect of the increasing marginal cost.

3.4 A Formal Model

With this foundation of the understanding of the three stages of market transaction under the relation-based and rule-based governance respectively in place, it is important to investigate how these two types of governance affects the market structure and growth as well. The objective here is to ascertain the structure of economy under the influence of the different institutional environment. Moreover, the development pattern may also be affected by the institutions that govern the transactions.

As regards the three stages of market transaction, they all suggest one fundamental difference between the rule-based and relation-based governance. And this difference is key to the modeling of these two types of economies, the impersonal market economy and the relational economy. The “rule of law” system is, as aforementioned, developed upon the idea and practice of specialization. A fraction of total resources

(including human resources) are exclusively used to provide the legal services to the entire economic system. Let us go through all three stages of market transaction that we have discussed above to see if the specialized activities are carried out at each stage. The first stage is the matching stage. An “information sector” emerges to minimize the information cost for the market participants. It improves the efficiency of matching process and thus the efficiency of transaction as well. Today, the internet technology enables a finer matching of demands and supply. And it is not surprising that a lot of resources are diverted to the e-commerce platform under the guidance of market signals.

Once a market participant identifies a partner and decides to work with him, the two of them enter into the contracting stage. At this stage, the contract will be signed to govern the future transactions with deal-specific terms. Under the rule-based governance, the verifiability of information is necessary to the communication. So the contractual terms are formulated in a way that the verifiability is ensured for the authoritative third party. The vague idea in relation to the arrangement of future transaction must be transformed into some deal-specific terms using the language only understood by the professionals. In doing so, the cost of verifying information is reduced. Hence, the contract formulation is also a service that is provided by specialists and thus requires significant specialization.

The third stage of the transaction is the enforcement of contract, which has been examined in some detail above. The contract is not enforced due to the persisting mutual trust but due to the credible threat made by an authoritative third party. Hence, a significant volume of resources should be used to maintain the impression that inescapable punishment is being imposed on any improper act. The third party must also meet the demand when dispute arises and requires resolution. Again, specialization is the superior way to economize on the enforcement of contract.

As shown by the analysis above, the idea of specialization permeates the rule-based governance with the aim to minimize the transaction cost caused by the impersonalization of the transaction. However, as Adam Smith and Young (1928) point out, the division of labor is limited by the extent of market. And the extent of market also depends partially on the division of labor. Hence, for an impersonal market, there is a threshold extent that the specialization is continuously deepened and the market grows as well.

Contrary to the idea of specialization underlying the rule-based governance, the idea underlying the relation-based governance is to embed as many economic activities as possible in the social relation. So the practice follows the principle of integration instead of that of specialization. For example, the information is created and circulated within the social network. Every member is an information intermediary. The job in relation to information processing is not assigned to the specialists. And at the contracting stage, the terms governing future transaction is open to the

re-negotiation on the basis of mutual trust. Because the information needs not to be verifiable, the cost of information verification is largely saved, including the cost caused by the accurate formulation of contract and the verification process. Instead, the contract is informal and fluid being embedded in and framed by the social relation. At the third stage, namely, the enforcing stage, the contract seeks enforcement through the long-term relationships. The reciprocal nature of the relationship ensures that it is beneficial (full rationality) or survival-advantageous (bounded rationality) for people to enforce the contract as it imposes the collective punishment on improper acts. From the interwoven network of long-term relationships emerges a collectivist culture. Hence, no additional forces are needed to implement the enforcement other than the collective will to preserve the cooperation. Only the cost of coordinating the collective punishment increases rapidly with the extent of market. Hence, the relational embedding of the economic activities solves the problem of enforcement at a low cost if the extent of market is below a threshold value, in direct contrast to the case where the specialization-based approach is applicable.

In what follows a model will be presented to capture the nature of relation-based governance in comparison with that of rule-based governance. The aim of a mathematical model is to clarify the circumstances under which the economy is embedded in the social relations or otherwise shows a preference over the impersonal transaction. For this purpose, a model with as simple a structure as possible is desirable. The focus is on two processes: the production process and the institutional process. It is easy to understand that through the production process the factors are transformed into consumer goods. The assumption is the presence of the market with the efficient resource allocation achieved. So the production process is not only related to the physical transformation but also to the institutional surrounding. However, the operation of market is not costless. There is a cost imposed on the economic system due to the institutional process. The institutional process refers to the dynamic of the institution preserving the market. In our case, there are two types of institution that have been discussed thoroughly in this chapter. In the model, the output of the institutional process is given. It is to say that the resources are always efficiently allocated so that the production is carried out along the production possibility frontier. Yet the transaction cost varies while different institution is adopted to govern the market transaction.

First, taking the rule-based governance as benchmark, the assumption is that there is only one good available in the model. It is a consumer good and production factor as well. In fact, this good is multiplied through a production process. It is not an assumption remote from the reality. The so-called production is to arrange, combine, integrate and disintegrate the factors into some specific forms. It is a process of self-multiplication if human resources are taken into account. In order to simplify the model, therefore, the assumption is that one representative good exists. And the cost is also measured in terms of the representative goods. As the rule-based governance involves high fixed cost and low marginal cost, the overall production function is as

follows:

$$y = \begin{cases} 0 & \text{if } x < C/(1 - c) \\ f((1 - c)x - C) & \text{if } x > C/(1 - c) \end{cases} \quad (1)$$

Where x denotes the factors, y denotes output (consumer goods), c denotes the coefficient of marginal cost and satisfies $0 < c < 1$. C denotes fixed cost and is fixed. When the market, at its primitive stage, cannot afford the transaction cost caused by the rule-based governance, the economic system is trapped in the equilibrium of non-production. Only when there is surplus left for future production is the equilibrium shifted from the non-production to consistent growth.

Another assumption to be made is the increasing return to scale on the ground of the specialization. As mentioned earlier, the degree of specialization is limited by the extent of the market. Hence, with the extent of market increased, a higher degree of specialization is enabled; with the specialization deepened, the growth is accelerated.

In mathematical terms, we have $\frac{df}{dx} > 0$ and $\frac{d^2f}{dx^2} > 0$. The dynamic of the model is demonstrated with the following figure.

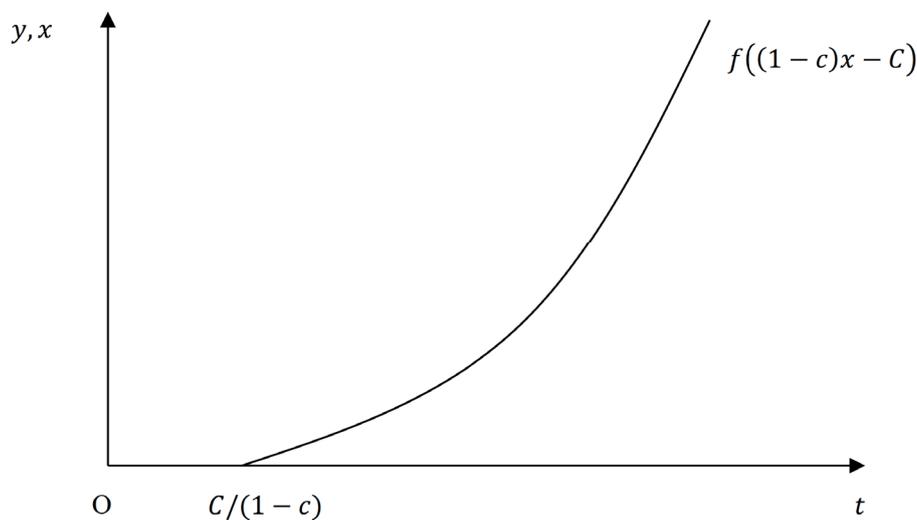


Figure 3.10 The dynamic of the economic growth under the rule-based governance

Figure 3.10 highlights three implications. First, the “rule of law” system is not an institution suited for the market governance in a transitional economy because the size of market is small at the beginning stage of transition. The cost of rule-based governance is not affordable for the market participants so that they would not choose to govern the transaction in that fashion. Second, the economy grows on account of the increasing return to scale. Because the marginal cost of rule-based governance is

small, the economic system can benefit from the specialization consistently. Third, the rule-based market economy indicates an integrated structure. The average cost of rule-based governance decreases while the economy grows. Hence, the cost is not an obstacle to the integration. On the other hand, the integration is the prerequisite to the specialization. So if the benefit generated from the specialization is enormous and cost is small, the integration occurs.

The model next addresses the dynamic of the economy in which the transaction is governed by social relation. The relation-based governance involves low fixed cost and high marginal cost. It is assumed that the marginal cost of developing relationships is increasing. Thus the total cost is affected by the extent of market because more relationships are required to sustain the cooperation as the market grows. If the marginal cost is increasing, there is a point where the benefit of market expansion (benefit of specialization) is equal to its cost (cost of relationship). Based on what we have assumed, the production function for a relational economy is as follows:

$$y = f(x) - c(x) \quad (2)$$

Where x denotes the quantity of factors, y denotes quantity of output (consumer goods), c denotes the marginal cost and $c(x)$ satisfies $\frac{dc}{dx} > 0$ and $\frac{d^2c}{dx^2} > 0$. The equilibrium is reached when the following equation holds:

$$\frac{df}{dx} = \frac{dc}{dx} \quad (3)$$

The right side of the equation is the marginal output of the economic system while the left side of the equation is the marginal cost of sustaining such system. If the growth rate of marginal output is lower than that of marginal cost and the total cost is sufficiently low at the beginning, there is a feasible solution to the equation (3). Contrary to the rule-based governance that requires a minimum size of market, the relation-based governance confines the market to a limited size. Though the size of an individual market is defined by the equation (3), it is possible that more than one market emerges. A segregated structure ensures the consistent growth under the relation-based governance. This is demonstrated with the following figure.

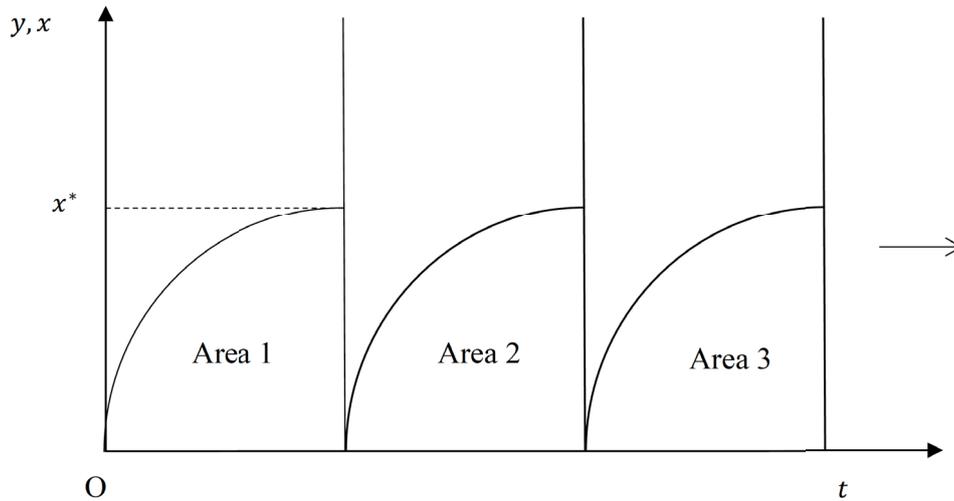


Figure 3.11 The dynamic of the economic growth under the relation-based governance

Figure 3.11 shows the dynamic of market growth under the relation-based governance. The areas denoted by the number 1, 2, 3 expands infinitely as the market is continuously growing. Each area represents an individual market and is identical to the others. The most efficient size of the market is reached in the highest point where the marginal benefit is equal to the marginal cost. And so is the size of social network. However, there is not only one market allowed for the resource allocation and utilization. The excessive resources flow into a new market until it reaches the equilibrium, too. The process repeats itself as the market grows and sees no end. If we regard the individual area in figure 3.11 as a separated market, we can say that the relation-based exchange system ends up in a segregated structure.

When the two systems are juxtaposed with each other, the conclusion is straightforward. The relation-based governance is superior whenever the market is small in size. And the rule-based governance is advantageous if the size of market is sufficiently large. The turning point is defined by:

$$f((1 - c)x - C) = \left(\frac{x}{x^*}\right)(f(x^*) - c(x^*)) \quad (4)$$

Where x^* denotes the efficient size of the market governed by social relations, a solution to the equation (3), assuming that the model is so structured that $x \gg x^*$. From the equation (4), it can be observed that the difficulty of rule-based governance lies in the large amount of overhead cost, which makes the formal institution burdensome at the early stage of transition. And the shortcoming of relation-based governance is that it confines the market to a limited size so that the benefit of specialization cannot be fully realized. On account of the increasing return to scale enabled by the specialization, the bigger the size of market is, the faster the growth is. Hence, the

rule-based governance is superior with respect to the long-run growth. Although the rule-based trading system may bring more benefit in the long-run, the development is, however, path-dependent. It was very convenient for the Chinese economy to be embedded in the social relations for a number of reasons. First, the institutional cost incurred was low given the small size of market; second, the common belief was directed towards social relation due to the persistency of traditional culture; third, the market was liberalized and thus demanded any sort of institution to govern the transaction. Therefore, at the early stage of transition, the market transaction is inevitably embedded in the social relations. The relational embedding of the market activities is a source of the so-called Chinese characteristics. It is the design of the following part to describe the Chinese characteristics with respect to individual sectors. The following is a short, yet comprehensive introduction, with a full analysis to be conducted by later chapters.

3.5 The “Chinese Characteristics”: A Network Analysis of Embedded Market

The model above is conducted from a macroeconomic, more accurately a growth perspective, taking the economy as a whole. Subsequent chapters of this dissertation will address the question how the relational culture affects the individual sectors. An overview is helpful here to facilitate the understanding of the following chapters. Chinese mainstream media like to emphasize the distinctive features of China’s transition to a market economy. The factors that make the Chinese market economy distinctive are called the Chinese characteristics. The concept does not only serve the propaganda purpose. It is also widely-accepted among scholars that China’s development strategy deviates from the textbook examples. As illustrated in the models above, the Chinese characteristics stem from the embedding of the market transaction in the social relations. The relational culture affects the development of individual sectors in different ways characterizing the economy as a Chinese-style one. The following table provides a short summary.

Sector	Chinese characteristics	Relational culture
Agricultural Sector	Household responsibility system	Institution of family
Industrial Sector	Township and village enterprises (TVEs)	Collectivist culture
	Export-led growth	Institutional arbitrage
	Industrial clustering	Localized trust
Financial Sector	Private lending	Differential mode of association
	Interaction between formal and informal financial system	Information gap

Table 3.12 The Chinese characteristics across sectors

The first sector undergoing the reform was the agricultural sector. Among the human

demands, the demand on nourishment is the most fundamental. Hence, the low supply of food caused an urgent demand of restructuring the agricultural sector. Yet it was not the government policy determining the direction of the reform. The institutional innovation started as a trial program carried out by the peasants spontaneously. The aim of the spontaneous innovative acts was to restore the household farming. It tried to put the family back to its central role in the agricultural production. Due to the high transaction cost caused by the disintegrated nature of agricultural production, the household farming is a solution superior to the collective, contractual and corporate farming as long as the land to labor ratio remains low and the size of market remains small.

Following the reform of the agricultural sector came the emergence of the non-state industrial sector. Due to the implementation of dual-track pricing strategy, the resources under the control of central planning authority and its branches flew from plan track to the market track. The liberalization of market allowed the development of the non-state industrial sector. However, it was difficult to start up a private business at the early stage of the reform. The attempt to run a private business was undermined by the problems such as the ideological obstacle, the lack of capital, non-access to the factors and the high risk of market transactions. The rise of the TVE sector provided an unexpected solution to all these problems. The TVEs were collectively owned and governed by the collectivist culture. Where a private firm could hardly survive, a collective enterprise might prosper. Due to the collective nature, it obtained access to the supply of factors and to capital as well. The vaguely-defined collective ownership was established to, at first glance, overcome the ideological obstacle. However, it also provided a platform for the embedding of corporate activities in the collectivist culture and thus sustains the cooperation in the corporate form. So the non-state sector experienced a strong growth at the early stage of transition. The collectivist culture plays a role of glue holding the resources together in the non-state sector. It was very important because China's economic success relies largely on the emergence of a new non-state sector and not on the privatization of the state-sector. If the TVEs were not there, it would take much longer for the non-state sector to prosper and China could have missed the opportunity for the high-speed development.

China's reform policy comprises two parts. One is to liberalize the market so that the resource allocation becomes more efficient. The other is to remove the barrier to international trade and integrate China's manufacturing sector into the world market. Over the first two decades following the reform, the major source of growth was the liberalization of market. As mentioned, the emergence of a non-state sector accounted for the majority of China's unprecedented growth. The transition from the central planning system to the market system succeeded and brought enormous benefit to the Chinese economy. However, as long as the new equilibrium concerning the resource allocation was reached, the growth rate may decline. Yet there was a chance provided by globalization to enable resource re-allocation on a bigger scale and across a wider

range. Globalization reallocates the resources through the international trade. And China was competitive in providing cheap labor forces. So the export-led strategy was adopted as a major means to accomplish the goal of growth. Moreover, the international trade is not merely an exchange of consumer goods and factors. It concerns the institutional environment also. The relation-based governance is not favorable to the creation of knowledge. Without the ability to innovate, Chinese economy might grow slowly after exhausting the potential of institutional change. But by participating in the international trade, China was involved in the international division of labor and thus took the advantage of the innovation overseas. We must take into account that such innovation was mostly achieved in a “rule of law” environment. This can be termed as “institutional arbitrage”, referring to the situation that it is not necessary for China to endeavor to develop a “rule of law” system but instead to leverage such system and high rate of innovation across the economies that governed by rules. Hence, during first decade after the entry into WTO, Chinese economy benefited significantly from the resource reallocation at global level. And it is anticipated that the Chinese economy, while continuing to take advantage of the innovation capacity of the developed countries, also seeks to create an innovation-driven sector.

As regards the financial sector, which is also important to the growth of a big economy, two systems were introduced. One was the formal institutions such as banks, cooperatives and stock market. However, they did not like to serve the non-state sector due to the information gap between them, not to mention the totally different incentive structure. But the non-state sector could not grow into a big size without the contribution of financial intermediaries. Hence, a private lending sector emerged to provide liquidity to the non-state sector and households as well. The private lending is governed by the differential mode of association. The financial risk increases from the inner circle to the outer circle of social network. And the interest rate increases accordingly until it cannot compensate for the roaring risk. Hence, the problem was that the ability of private lending sector to finance the private firms was limited. So the private firms also sought the access to the banks. They formed an alliance to guarantee for each other. The cross-guarantee was based on the social relation whereas the lending was made upon the formal rules. The information gap between relation-based and rule-based trading system gave rise to the instability of the financial system. It should be acknowledged that the underground financial system contributes enormously to the growth of China’s non-state sector. But the increasing financial demand cannot be met by such a system and the risk would eventually become too high to tolerate without upsetting the economy.

3.6 Summary and Conclusions

This chapter investigates the relational culture, relation-based governance and its influence on the economic structure and growth. First, it shows that the Chinese culture is a relational culture characterized by the principle of reciprocity, collectivism

and differential mode of association. The principle of reciprocity is fundamental to the relational culture. As China's most influential philosophy, the Confucianism acknowledges the importance of reciprocity to govern the long-term relationship. It also regards the family as the basic social unit. The model of family was applied to the collective actions so the clan and the family-state were enlarged families to carry out various social functions. Two patterns are of particular interest to the current study. First, a collectivist culture emerged to govern the social interaction in an indirect-reciprocal way. Second, the differential mode of association outlined the distinctive feature of social network that the benefit of cultivating a relationship diminished from the inner circle to outer circle of social network.

The second part analyses how the relational culture preserves cooperation. Three mechanisms, namely the direct reciprocity, indirect reciprocity and interlinked interactions across social domains, ensure the cooperation in a networked environment. The principle of reciprocity is applied in the recurrent interactions. So it concerns the time extension of interactions. And if the interaction occurs not only between two trading parties but among a group, the indirect reciprocity plays a role in prompting cooperation. The key point of collective punishment is information. Hence, the reputation mechanism is essential to the success of spatial extension of interactions. Beside the time and spatial extension of interaction, the domain extension of interaction is also usual when the extent of market is limited. The mix-up of settings of two different games may change the best strategies the players choose to play. Hence, under certain circumstance, it is Pareto-improving to interlink the interactions across different social domains.

Part three shows that the relation-based governance is superior to the rule-based one during the early stage of the growth of market. What it aims to explain is why the market transaction was embedded in the social relation during the early stage of China's transition. In the pre-industrialization era, the personalized transaction is thought to dominate the economy owing to the small size of market and low frequency of transaction. China, during the early stage of the reform, faced a problem of re-establishing the market system. If the transition to the market system was in its very beginning, it was not reasonable to rely on the extensive order of the market. China's transitional economy was in a situation bearing resemblance to that of pre-industrialization economy. So it sought a solution other than the rule-based approach in order to preserve the market. As mentioned in part one, the Chinese society has been consistently influenced by the relational culture. A large amount of social capital was formed during the course of history, which indicates that the fixed cost of relation-based governance was sufficiently low. So it was natural for China to make utilization of the relation-based governance to preserve market.

The last part of the chapter provides a brief overview of the so-called Chinese characteristics. The impact of relational culture on the operation of individual sectors is significant to the effect that the orthodox theory cannot explain the astonishing

success of China's transition. So the "Chinese characteristics" is a concept to illustrate the inexplicable part of China's transition. In fact, the relational embedding of market transaction resulted in the rise of Chinese characteristics that characterized the operation of individual sectors.

As the design of this dissertation suggests, the following chapters should investigate how the relational culture affected the transition with respect to the individual sectors. They are elaborations of the part on Chinese characteristics. But before any further investigation is made, a chapter will be devoted to the role of state in the great transformation. The prerequisite to the relational embedding of market transaction is the political tolerance. The spontaneous innovative practice from bottom up should not only be allowed but also institutionalized from the governmental side. Therefore, the next chapter attempts to explain how the government and its reform strategies affect the approach to the transition.

4. The Top Down Mechanisms: How China's Politics Effects Institutional Innovation

The literature relating to “government policy” and “revolution from periphery” suggests that there are two forces affecting China’s transition to market economy. The top-down imposed policy determines the scope within which the reform operates. The cultural force from bottom-up ensures a smooth transition to market economy by embedding the economic activities in the social relations. It is worth noting that the appropriate policy is the prerequisite to the success of transition as it provides the opportunities for the bottom-up institutional innovation to emerge. If the policy is to, for example, privatize the state sector, like what Russia did in the big bang scheme, it would be difficult for the households, local institutions and resources to participate in the transition. Thus the plan for this chapter is to investigate China’s reform strategy and the political system that make such strategies possible, prior to any further study of the effect of cultural embedding on the establishment of the market order with Chinese characteristics.

This chapter is divided in three parts. The first part addresses the question of how China’s government is structured. In their well-received works, some scholars argue that China’s political system features a multi-layer structure. This quasi-federalist structure explains China’s capability to apply a gradualist approach to reform. The federalist political system is based on the fiscal decentralization. It is therefore logical to examine the development of China’s fiscal system and its implications for political decentralization and re-centralization.

Part Two of this chapter analyzes the distinctive features of gradualist strategy compared to the “Shock Therapy”. The gradualist strategy that China undertakes is composed of two parts. The first is to allow the coexistence of central planning system and market system in order to avoid the macroeconomic instability and to make China’s reform “a reform without losers”. The dual-track pricing system is the most notable manifestation of such an approach. The second part of the strategy is policy experimentation. By establishing special economic zones, the central authority could monitor and evaluate the effect of policies. The reversible nature of policy experimentation improves governmental control over local institutional innovations while leaving open the door for wider adoption if appropriate.

Part three discusses the Party’s effort to establish the “rule of law” system. The practice and its outcome may appear disappointing as China’s legal system failed to meet its duty over last thirty year. The recent official documents still refers to the importance of “rule of law” showing that the legal system is not really that important yet. But there is also trend indicating the increasing importance of the legal system.

4.1 China's Political System: The Chinese-style Federalism

China's approach to socialism was inspired by the Soviet model. The Soviet Union's strategy of constructing a socialist system (first phase of communism) was to corporatize the entire country. Lenin points out that in the first phase of communist society:

*All citizens are transformed into hired employees of the state, which consists of the armed workers. All citizens become employees and workers of a single countrywide state "syndicate". All that is required is that they should work equally, do their proper share of work, and get equal pay.*¹⁸

As we know, the core idea of Marxism is to abolish the capitalist mode of production and replace the private ownership system with the public ownership system. Yet, unlike private ownership, public ownership requires a decision-making mechanism to deal with the allocation of resources to different ends. It is because, in general, without any private control over resources, the rent generated from use of resources is to be dissipated (Gordon, 1968; Cheung, 1974). Under the Soviet-Union-style socialist system, the state exercises the control over the resources to avoid the rent dissipation. Following that strategy, the state engaged to transform the society into a huge corporation. All social functions were compressed in a "state-syndicate", which Lenin, while interpreting Marxism, considered it to be the most appropriate form of socialist system. China imported this approach from the Soviet Union. Yet at the same time Chinese characteristics were introduced into the Soviet model, which included, among others, the decentralization of authority, resulting in the creation of a federalist-natured system. As Qian and Xu (1993) put it:

"Unlike Soviet Union's unitary hierarchical structure based on functional or specialization principles (the U-form), China's hierarchical economy has been the multi-layer-multi-regional one mainly based on territorial principle (the deep M-form, or briefly, the M-form)".¹⁹

Following Leninism, the Soviet Union developed a unitary and functionally differentiated system. The control of the central authority extended to the local level along the functional lines. The ministries acquired direct control over the production and corroded local autonomy. The local authorities were nothing more than a branch of the central authority and did not function in an independent way. The information flew vertically from the SOEs and local bureaus to the ministries which were responsible for the decision-making while the local authorities were only assigned the job of information processing. Unlike the Soviet Union, China has a multi-layer-multi-regional political system. The proper functioning of such a political system requires a certain level of local autonomy. The local governments must be granted the fiscal authority and be allowed to manage the local affairs independently.

¹⁸ Lenin, Vladimir, *The State and Revolution* (1917),

<https://www.marxists.org/ebooks/lenin/state-and-revolution.pdf>

¹⁹ Qian, Yingyi, Chenggang Xu, *Why China's economic reforms differ: the M-form hierarchy and entry/expansion of the non-state sector*, *Economics of Transition*, Volume 1, Issue 2, June 1993, Pages 135–170,

Incidentally, the political structure is fashioned in such a way that local governments were administratively subordinate to the central government, yet organizationally independent and self-preserving. For example, the regional bureau of commerce is a department of the regional government. Though it is ordered to implement the policy formulated by the Ministry of Commerce, it is not directly supervised by the Ministry of Commerce. A popular political term “Kuai Da Yu Tiao” indicates that the local governments are regarded as more important and powerful than the ministries.

A unitary system has one obvious advantage. A unitary system ensures that the policy is developed and implemented from a global view. Thus, the pursuit of local benefits is not tolerated in achieving maximization of global benefits. But this advantage does not outweigh its disadvantage. Solving resource allocation with a “state syndicate” raises the transaction cost, among others the information cost and coordination cost. Hayek argues in his remarkable article “The use of knowledge in society” that the centralized decision-making is inefficient due to the central authority’s inability to utilize the local knowledge. Besides, the principal-agent problem becomes more severe as it is more difficult for ordinary people to monitor the central authority. However, recent research (Cockshott, Cottrell, 2008) suggests that the modern information technology may overcome the shortcomings of socialist system. In short, the key point of economic planning is calculation capacity. The computer technology and Internet provides enormous calculation capacity thus making the operation of economic planning system possible.

The M-form of government is more flexible. First, compared to the central authority, the local authorities have better access to the local information so that they fit better into the role of decision-makers with regard to the local affairs. Moreover, because of their control over the information channeling, the local authorities could either refine the policy or manipulate the information to convince the central authority of the effectiveness of the policy, or its ineffectiveness as the case may be. Bolstered with the discretionary power, the local authorities are free to choose whether to implement the central policy or not. They could also keep quiet on spontaneous institutional experimentations that would not be allowed under the central policy. Furthermore, the local governments are much more invested in local interests promoting local development and shielding it from any sort of interference. Hence, the local autonomy is the key to the success of the economic reform. Due to the cooperation of the local authorities, the informal culture could be integrated into the institutionalized practice so as to reduce the transaction cost and stabilize the market system in its early stage. Moreover, the M-form of government also ensures a rapid response to the changes so that the wrong policies could be avoided.

Ideally a balance should be achieved with respect to the central-local interaction. The over-decentralization of power would result in the lack of control over local authorities with a number of consequences. First, the coordination of cross-regional projects becomes more difficult. Although the local authorities could reach consensus

through the negotiation, they could also fail to agree in some cases. Second, the local protectionism may rise to impair market competition. Blanchard and Shleifer (2001) argue that in Russia:

*Local governments have been captured by the initial rent holders, primarily by the old firms that dominated the Russian economy before the transition. In this view, local governments have worked both to generate transfers to these firms, and to protect them from competition by new firms.*²⁰

Moreover, “competition for rents by local officials” eliminates “incentives for new firms to enter”. As they find, in Russia, the local governments cooperated with the rent-holder, most of whom are the former high-rank officials of the Soviet Union and directors of SOEs. Once the local governments were “captured”, they would support the incumbent firms to monopolize the market and share the rent generated from the monopoly.

As for China, local protectionism is also an obstacle to economic growth. The provincial governments, in order to shield local firms from competition, may restrict the sales of non-locally produced goods (Lee, 1998). According to Blanchard and Shleifer (2001), Russia’s problem was more serious. At least China’s local government contributes to the growth of new entrants. Scholars who emphasize the role of political decentralization in fostering the economic growth claim that “the competitive benefits of market-preserving federalism depend very much on political centralization”. China’s political system, featuring a high degree of decentralization, overcomes the problem of localism by centralizing the cadre management.

China is a party-state. So there are two lines of political institution. One of them is the people’s government. As discussed above, the system of government is structured in a way that the administration is delegated to the different levels of government. Another one is the Party. The Party is tightly organized and centralizes the cadre management at the top of the hierarchical system. In principle, the head of provincial government is elected and appointed by the provincial people’s congress. In fact, the people’s congress merely performs the formality of confirming the person presented to them by the Party. The Politburo and Central Committee of the Communist Party of China decide the appointment and removal of the heads of provincial governments. And the organization department of the CPC Central Committee manages the promotion, removal and shuffle of all high-rank cadres thus exercising the tight control over the cadre management to eliminate any possibility of disintegration of the Party. In that regard, China’s political organization provides an effective counterweight to the over-decentralization of power and the rise of local protectionism.

4.2 The Fiscal Decentralization

²⁰ Blanchard, Olivier, Andrei Shleifer, Federalism With and Without Political Centralization: China Versus Russia, *IMF Staff Papers*, Vol. 48, Special Issue, 2001, Pages 171-179

One major aspect of the political decentralization is the fiscal decentralization. This part is devoted to a case study of fiscal decentralization to offer an account for the dynamics of a changing political environment. Before 1978, China's fiscal system was a centralized one. In 1950, a "tong shou tong zhi" fiscal system was introduced so that most of the government revenue was required to be submitted to the Ministry of Finance. And the State Council arranged the budget of the local governments. Between 1950 and 1978, in spite of several attempts to decentralize fiscal authority, the fiscal system remained largely centralized.

However, the coexistence of the fiscal centralization and the multi-layer structure of government led to institutional tension. Following the idea of the "state syndicate", the fiscal centralization was certainly the best strategy with respect to the budget management. But the M-form of government required the fiscal autonomy for the local authorities. Without the fiscal autonomy, the M-form of government would be significantly impeded in its function. Therefore, shortly after the Chinese government had shifted the attention to the economic development, fiscal reforms were carried out to release the tension by enhancing the local autonomy. Over the first period from 1980 to 1993, a "fiscal responsibility system" was developed to create some sort of contractual relationships between the central and local authorities with respect to the fiscal revenue and expenditure. During this period, the fiscal autonomy was granted for the local authorities. Entering the second period, the State Council decided to increase the share of fiscal revenue allocated to the central authority and thus replaced the "fiscal responsibility system" with the "tax sharing system", which might have caused a lot of problems affecting Chinese economy in one way or another.

The fiscal responsibility system

The major problem of the fiscal centralization was that, as Oi suggests, "Localities became independent fiscal entities that had both responsibilities for local expenditures and the unprecedented right to use the revenue that they retained." With the fiscal autonomy being undermined, the local authorities were disadvantaged in the central-local bargaining. On the other side, with the increasing power, the central authority sought to interfere with the local policy innovation. The fiscal transfer was an effective measure to force the local authorities to be a trustworthy implementer of the central policy. However, once the function of policy innovation shifts upwards away from local levels, the innovation could not continue due to the lack of local knowledge and the organizational resources to mobilize the local institutional experimentation. This is one of the biggest concerns towards further reforms in China.

The task of the first fiscal reform in 1980 was to define the scope of revenue shared between the central government and the local authorities. In practice, the government revenue was divided into three categories: the central fiscal revenue, the local fiscal revenue and the sharing revenue. The profit (including income tax) of central SOEs

and customs duties were sources of central authority's revenue while the profit of local SOEs, salt tax, agricultural tax, corporate income tax and other local taxes went to the local authorities. Industrial-commercial tax (circulation tax) and profit of local SOEs managed directly by ministries were shared between central and local authorities.²¹ The adjustment of the sharing ratio would be made when local authorities had budget deficit or budget surplus.

With the sources of revenue and sharing ratio determined, the central authority signed a fiscal contract with the local authorities. According to the contract, local authorities' budget surplus should be shared between central and local authorities. The budget deficit was to be financed by the central authority's share of the transaction tax. If the industrial-commercial tax was not sufficient to cover the budget deficit, any gap would be filled by the fiscal transfer payment. The sharing ratio and transfer payment rate was fixed for the next five years, hardening the soft budget constraint for the local authorities.

The fiscal responsibility system was amended several times. Between 1980 and 1985, a reform was carried on to regulate the distribution of the SOE profits. Prior to the reform, in addition to the profit tax, the governments also claimed a share of the SOE profits as a revenue source. To avoid the improper appropriation of the corporate profits, the source of government revenue was limited to the profit tax. Against that background, a new regulation concerning the fiscal system was enacted in 1985. The amendment was minor and aimed mainly to delineate the income right of the governments.

Further fiscal reform came in 1988. The fiscal contracting system brought the fiscal decentralization to the extreme. Oi (1999) gives a summary of the fiscal contracting system:

Revenue sharing is a process in which local governments down to the level of the township have the responsibility for collecting all nationally set taxes and then turning over a portion of this revenue to the next higher level. Those who have increased their tax revenues are allowed to keep the major portion of the increase. The more a locality collects, the more it can keep. The provisions of revenue sharing are formalized in fiscal contracts between the central state and each of its provinces, between each province and its prefectures, between each prefecture and its counties, and between each county and its townships. The terms of the contracts vary. Some areas employ an overall ratio, such as 70:30; the level of government from which the taxes are collected keeps 70 percent and 30 percent is sent to the next higher level. In other cases, a level of government pays a fixed lump-sum quota to the next higher level, but, once that quota is met, the level of government that has collected the revenue retains all, or the bulk, of the over-quota tax revenues. Regardless of the

²¹See Regulation on implementation of a "hua fen shou zhi, fen ji bao gan" (define scope of revenue and expenditure, enforce fiscal contract) fiscal system. The text of regulation is available in: <http://fgk.chinalaw.gov.cn/article/xzfg/198002/19800200268001.shtml>

*system of revenue sharing in effect, increased tax collection guarantees a locality an increase in retained tax revenues.*²²

There were six models of fiscal contracting. The first one was incremental revenue sharing. Given the expected growth rate of revenue in the fiscal contract, the expected incremental revenue was shared between the central and local authorities at a fixed ratio, regardless of whether the expected growth rate was realized or not. But, if the real growth rate was higher than the expected one, the surplus was retained by the local authorities. The second one was revenue sharing. The sharing ratio was calculated based on the ratio of the expected expenditure to the expected revenue. The third model was a combination of the former two models. The localities submitted a fixed proportion of the total revenue and a fixed proportion of incremental revenue to the upper level. This model was only applied to three cities, namely Dalian, Qingdao and Wuhan. For example, the sharing ratio of revenue was 27.74% and that of incremental revenue 27.26% for Dalian. The fourth one was the progressive quota of revenue. Guangdong and Hunan provinces paid a set quota to the central government. But the quota increased at an annual rate agreed by both sides. The fifth one was the fixed quota of revenue. This model was similar to the fourth one. The only difference was that the quota paid to the uppers was fixed over time. The sixth one was the fixed subsidy. The underdeveloped provinces received the fiscal transfer payments from the central government to finance the necessary expenditure covering the salary of state cadres and the provision of basic public services such as education and medical care.

As argued by some scholars (Oi 1992, Lin 2000, Qian 1997), the fiscal contracting system was very effective in promoting the local economic growth as it provided the local authorities with the incentive as well as the ability to promote the local economy. Oi (1992) develops a term of “local government corporatism” indicating that Chinese local authorities bear resemblance to corporations. They contributed to the local growth and shared the outcome acting as a shareholder of the local economy. The fiscal autonomy created a lot of motivation for the local authorities to promote the local growth. Moreover, in practice, the government revenue could be divided into two categories with respect to the sources. One was within-budget revenue which was shared between localities and uppers. The other was extra-budgetary revenue which was exclusively retained by the local authorities. And the major source of extra-budgetary revenue was the profit of township and village enterprises. Hence, the local authorities were incentivized to develop the TVE sector. They would not prey on the TVEs because they are interested in the long-term benefit. The fiscal decentralization is one of the factors contributing to the rural industrialization and the rise of the TVE sector. The major reason was that it enabled the local authorities to draw on the local institutional innovation to develop an adaptive growth pattern. As long as the government policy was to liberalize the market, the utilization of cultural resources and social capital could be maximized to ensure the growth.

²² Oi, Jean C., *Rural China Takes Off: Institutional Foundations of Economic Reform*, University of California Press, Berkeley · Los Angeles · Oxford, 1999, Pages 29-30

The growth also generated benefits for individual cadres. First, they could increase their own salaries and on-job consumptions such as bigger offices, luxury cars and better lunches. Second, more fiscal revenue meant more political power. The coordination and mobilization ability of the local authorities relied on their budget. A local authority would lose the influence if it had a tight budget. Third, the rapid economic growth increased the promotion opportunity for the cadres. A harsh competition for promotion existed among the cadres due to the scarcity of high offices. The competition turned into a rat-race that forced every cadre to work hard to survive and expand the budget they control (Zhou, 2007). Since the contribution of the individual cadres was measured by the economic performance, they would make all the efforts to help the economy grow.

The tax sharing system

In 1993, the leadership of the CPC decided to replace “fiscal responsibility system” with “tax sharing system”. The purpose of this fiscal reform was to eliminate the negative effects of fiscal responsibility system. One of the negative effects was that the fiscal responsibility system produced a weak central authority and strong local authorities. The revenue submitted to the central authority was quite small. Sometimes the real annual growth rate of the central fiscal revenue was even negative due to inflation (Wu, 2010). For example, as estimated by Ye and Liang (1999), in 1988, the central government only received 3.3% of the incremental revenue while local governments took 96.7% of them. The sharing ratio remained almost the same for the year after that. As a result, the central authority gradually edged into a fiscal crisis and borrowed money from provincial governments for several times. The tight budget restricted the ability of the central authority to coordinate the infrastructure construction. Yet, the rapid economic growth called upon the central government to invest more in the infrastructures such as railways, electricity grid, water supply and so on. The inadequately financed central governance was having a stifling effect on the economy.

Another major negative effect of the fiscal responsibility system was the rise of local protectionism (Bai et al, 2004; Hu and Zhang, 2005; Lee, 1998; Wu, 2010). Often the best strategy to protect profit is to prevent competition. Consequently the local authorities imposed barriers on access to the regional market so that the competition from outside the region was eliminated. Bai et al (2004) finds that local authorities had strong incentive to protect industries with high tax-plus-profit margins and high share of state ownership. This finding is consistent with the analysis of the fiscal responsibility system. The purpose of protectionism was to share more revenue from the local firms. So these firms should be made cash cows and also be easy to control. The local protectionism formed a prisoner’s dilemma and diverted the entire economic system away from the global maximization of the efficiency. Hence, it must be handled with the political centralization. Moreover, the central authority felt like

losing control over the local authorities as they pursued independence and did not quite follow the instruction from the upper. The local authorities' pursuit of independence provoked the Politburo and Central Committee, who decided to change it.

1993 was the year of significance with respect to tax reform. . To obtain the bigger share of the total fiscal revenue and to curb local protectionism, the State Council issued the "decision on introducing the tax sharing system". The policy encountered considerable resistance from local authorities for it cut down their fiscal revenues and thus weakened their political powers. The then Premier Zhu Rongji, spent several months persuading the heads of provincial governments to accept the decision. Eventually he succeeded due to the strong leadership of the CPC. The new policy reformed the tax system and re-allocated the revenue sources between the central and local authorities.

Two critical strategic moves were taken by the central government to increase central fiscal revenue. One was to re-allocate the value-added tax between central and local authorities with the sharing ratio of 3:1. The central authorities took 75% of total amount of the value-added tax while the local authorities retained 25%. The value-added tax was once known as the industrial-commercial tax. In 1984, the industrial-commercial tax was abolished and instead tax authority began to collect value-added tax and sales tax. The former was raised on products and the latter on services. In the beginning of the economic reform, the corporate income tax was the major source of the fiscal revenue. The corporate income tax could be compared with the share of profit paid to the government in the central planning system. However, as the reform moved forward, market competition lowered the average profit rate whereas the ever-deeper specialization increased the frequency of market transaction. As a result, the circulation tax became the major revenue source. As shown by statistics, in 1985, the total amount of value-added tax reached 14.77 billion Yuan while the amount of corporate income tax was 69.61 billion Yuan. However, in 1993, the year before the fiscal reform, the amount of value-added tax increased to 108.15 billion Yuan, nearly twice of the corporate income tax.²³ Since the value-added tax became the largest revenue source, the central government proposed a fixed sharing ratio for value-added tax and took the larger slice of the cake.

The other strategy was institutional. Though the policy was important, how the policy would be implement was even more important. The institution of taxation should also be reformed while the tax policy was changed. The grasp of the central authority on the taxation system would not be promising as long as the taxation bureau remained a department of the local authorities. Thus, the reform separated the taxation bureau into two departments, the state taxation bureau and the local taxation bureau. The responsibility for taxation was also divided between these two bureaus. The state taxation bureau was responsible for the customs tax, consumption tax, central SOE

²³ National bureau of statistic of China, *China statistical yearbook 2013*, China statistics press, Beijing, 2014

income tax and all the other taxes determined to be the revenue sources for the central authority. The local taxation bureau was responsible for sales tax, local SOE income tax, individual income tax and other taxes allowed to be retained for local expenditure. Unlike the local taxation bureau which was a branch of the local government, the state taxation bureau was subordinate only to the upper level of the bureau. By restructuring the taxation institution, the central government extended its control over revenue sources to the local level. The capacity of central government to raise revenue became ever strong.

As shown by the statistics below, tax sharing system was very effective in centralizing the fiscal authority. There are two groups of figures that might indicate it. The first one is the growth rate of value-added tax (VAT). The amount of VAT jumped from 108.15 billion Yuan of 1993 to 230.83 billion Yuan of 1994. It was doubled in one year, showing that the central authority's ability to raise revenue was improved by reforming the institution of taxation. Another group of numbers is the gap between central and local fiscal revenue. The diagram shows that after the first fiscal reform the local authorities were wealthier than the central authorities and the gap was widened throughout the 1980s. It was until 1994 that the central authority recovered from its fiscal crisis. And since 1994, the central authority has taken control over the major revenue sources and has had a superior bargaining position against local authorities.

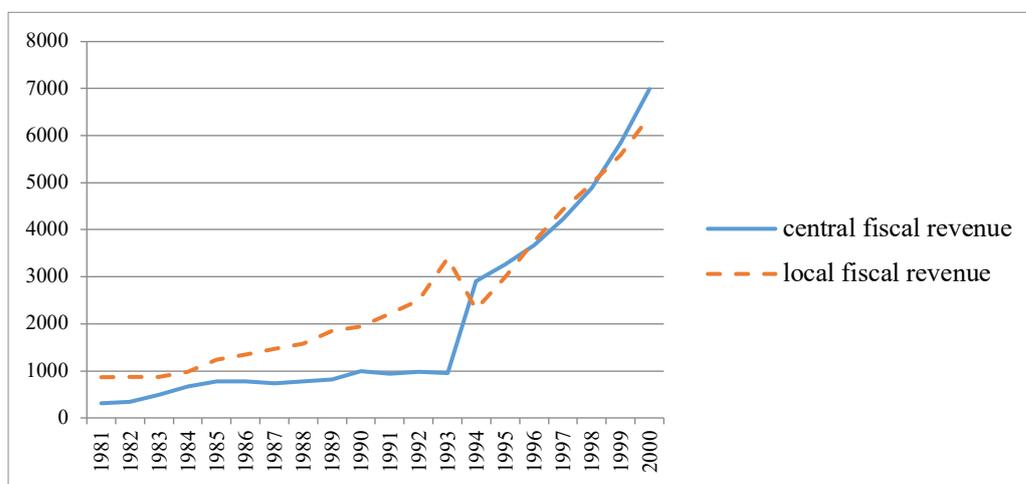


Chart 4.1: The central and local fiscal revenue from 1981 to 2000

Not surprisingly, the tax sharing system caused some problems. Because of the fiscal centralization, less revenue was retained by the local authorities. It seems that the local authorities would seek to raise the extra-budgetary revenue and have eventually no difficulty to balance the budget despite the fiscal reform. One of the major sources of the extra-budgetary revenue was the profit of TVEs. However, the tax sharing system also affects the incentive of local authorities to develop the TVE sector. Chinese scholars (Sun and Zhou, 2013; Zhou, 2012) point out that the revenue that the local authorities took from TVEs decreased with the fiscal centralization. The

value-added tax was raised on the market transaction, regardless of whether enterprises made profit or not. The central authority took 75% of total amount of the value-added tax but did not bear the risk of operation of the TVEs. The local authorities, however, retained only 25% of VAT but shouldered full responsibility for supporting the TVEs such as providing financial access, transferring resources from plan-track to market-track and avoiding potential risk of bankruptcy. With the increasing number of new entrants, the market competition became intensive and thus lowered the average profit rate. By the end of 1984, there were more than 6 million TVEs, among which 4 million were new entrants. And the number was doubled in 1985. With more and more capital and work forces entering the rural industrial sector, the marginal profit fell quickly and so did the average profit. Correspondingly the marginal benefit of developing TVEs also diminished over time. Moreover, the increasing market value of those TVEs that survived the harsh competition created the temptation for TVE leaders to appropriate the collective property through privatization.

The fiscal burden forced local authorities to search for a new non-tax revenue source. And this new source turned out to be the land assignment fees (Zhou, 2006). In socialist China, the land is either state-owned or collectively-owned. So, the governments were entitled to charge fees from the land assignment. But the underlying mechanism was more complicated than the simple auction of land use right. As Cheung (2009) suggests, a revenue-sharing system emerged as the result of interaction of governments and enterprises in the presence of public land ownership. In Cheung's model, the county governments made use of two tools to influence the economic growth. One of them was tax. The other was land use rights. The local authorities offered the land and shared the profits in the form of tax. Cheung compares the revenue-sharing with the sharecropping. The county governments maximize the revenue by setting the land transfer fee and tax rate. And they share the revenue with lower and upper level of governments so that the entire administrative system was woven into a revenue-sharing web and provided the incentive to preserve the market system. Given the reality that taxation income must be shared with the uppers, the local authorities might try to maximize the value of land rights, which resulted in the Chinese-style "land finance". The controversy over the effect of "land finance" awaits further academic analysis. Apart from the regular analysis, Peter Ho (2005, 2013) offers a new theoretical perspective to understand the logic of China's land reform. He applies the institutional functionalism to Chinese-style urban-rural land system and argues that the land property right is intended to be vaguely defined. The structure of land tenure system is context-specific. So the complicated arrangement that we so far discussed is adaptive to a transitional economy like China. According to Peter Ho, it is an outcome of endogenous spontaneously ordered development and therefore, in spite of its perverse nature, is sustainable and also efficient while considering the social context it is embedded in.

The other noteworthy effect of the tax sharing system is that it produced an

ever-strong central government. Because the local government expenditure is financed through the fiscal transfer, the right to formulate the industrial policies falls into the hands of ministries. The details of expenditure of the revenue transferred to the local authorities would be dictated by the official documents from the ministries. With increasing fiscal revenue, the central government regained the control over the local authorities. But the danger is that the spontaneous practice from bottom up would no longer be institutionalized through the efforts of the local authorities. On the contrary, any whimsical idea from officials of the ministries might find its way into implementation in areas far removed from the central government. The local authorities, while relying on the fiscal transfer, had no other choice but to implement ministerial policies, sound or otherwise. So there is a danger that the tax sharing system limits the local autonomy to the extent that it might damage the vital component of the Chinese economy, namely the spontaneous practices in a free and competitive environment, which was both based upon and contributory to the extensive use of the local information and institutional resources. In that sense, how to handle the central-local relationship is of particular importance to China's sustainable growth.

4.3 China's Gradualist Approach to Reform

Socialism is one of the most significant social experiments in human history. But the economic part of this experiment is prone to failure because the central planning system is not efficient in processing the information. Hence, socialist nations that once followed the Soviet model eventually start the transition from the centrally planned economy to the market economy. The central question is how to initiate and complete the transition. Russia applied the "shock therapy", implementing a set of radical reform policies in a short time with the aim to complete the transition in a "big bang". As Murrell (1993) suggests, the big bang strategy presents a mechanical view of transition. Armed with the knowledge of economics, the Russian technocrats transformed themselves into the social engineers leading the big bang transition from top down. But they failed in the same way that the central planning system failed. It was beyond individual's ability to control the economic system either in equilibrium or in transition. The politicians and technocrats were preoccupied by the idea that the market system, once introduced, could solve the resources allocation in an extremely efficient way. However, the institutional environment that the market system was introduced into was not prepared for the introduction of market. People lacked the knowledge of market. The makers and implementers of policies lacked the capacity of supervision. The market transactions lacked legal enforcement and protection. In that kind of environment, the huge rent generated from the reform might be appropriated by the privileged class. And the distribution of initial rent might affect the working of economic system in a profound way, as illustrated in the model below.

Unlike the design-based reform unfolded in Russia, China's transition was driven by the spontaneous practice from bottom up. It was known as the gradualist approach to

reform. Contrary to the idea of an intended slowdown of the pace of transition, China's reform was much more a de-centralized one based on trial and error. The multi-layer political system enabled the top-down institutionalization of the bottom-up best practices of the households and firms and other entities. China's transition to market economy was not foreordained but attained as a result of interactions among the governments, collectives and individuals. The aim, direction and strategy of the transition was only determined during the transition.

So the Chinese-style gradualist approach presents an evolutionary view of transition. Differing from the mechanical view of transition, the evolutionary view of transition affords significance to the pace of the transition and the way it unfolds. Trial and error is the philosophy governing the process of transition. In practice, two strategies were implemented. One was the policy experimentation and the other was the introduction of the dual-track pricing system. Contrary to the shock therapy abolishing the central planning system entirely, the gradualist strategy opened, besides the plan track, a price track for the resource allocation. In that way, the market mechanism was introduced to replace the central planning gradually. The comparison below of the shock therapy with the dual-track approach will illustrate how China's gradualist reform came to be "a reform without loser".

Big bang strategy vs. Dual-track pricing system

The major idea of shock therapy was to establish the market system through the fast-privatization and liberalization. However, the market was "captured" by the "initiate rent holders" due to the information asymmetry and failure in coordination, which did not only influence the distribution of incomes but also affect the economic efficiency. As a result, the market was dominated by a few monopolistic firms. And they were motivated to cut production and raise price. The model is illustrated by the following figure.

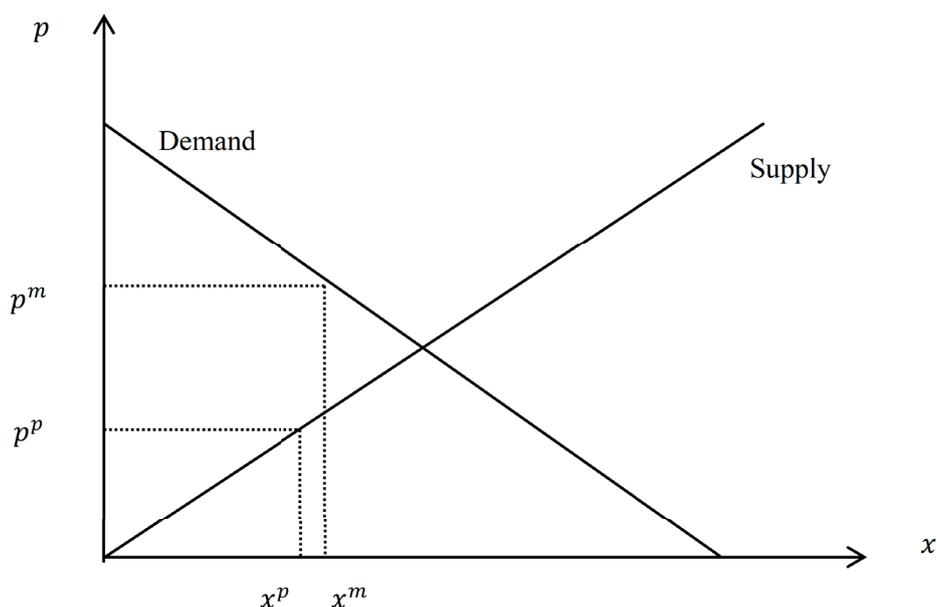


Figure 4.2 An illustration of emerging monopoly due to big bang strategy

Assuming that the planned quantity of products is x^p , and the corresponding price is set to be p^p . Suppose that the economy experiences a big bang transformation. The price is liberalized and moves upward along the supply curve. Normally, the supply should respond to the rising price. However, it did not respond sufficiently due to what can be described as an insider-outsider discrepancy. The big bang transformation divided people into two groups, insiders and outsiders. Insiders were former Soviet political and industrial elites. Outsiders referred to the normal people who neither had access to the information about the reform nor could influence the reform policy. The big bang transformation aggravated the asymmetry of information and triggered a “capture” effect. The insiders knew how to seek opportunities in the transitional economy and even to create such opportunities. On the contrary, ordinary people, having lived so long under the central planning system, knew nothing about the new life imposed on them. They were forced to participate in the reform and could do nothing to change it. For example, to restructure the SOEs, Russia’s government launched a project of “voucher privatization”. Vouchers were distributed equally among the population to exchange for shares of SOEs or to be sold in open market. Not well-informed of the value of vouchers, many Russian sold them underpriced. The insiders, however, bought the shares of the SOEs and exploit the opportunities offered by the chaotic privatization. This example shows that, if the government attempted to create a private sector through the restructuring of SOEs, it was very probable that the state-owned assets were transferred to the private hand of a few political and industrial elites who were the “initial rent holders”. Unfortunately, this was not solely a problem of initial condition. The rise of the oligarchs also affects the efficiency of market as they monopolized the market. Moreover, as mentioned, Russia’s governments were captured by those “initial rent holders” and protected them from competition by new entrants. It was a nightmarish combination that any

emerging market could do without.

In the figure, the new equilibrium that the transition leads to shows a monopolistic feature. The market price p^m is higher than the price that clears the market. To maintain the price p^m and thus maximize the monopoly rent, the supply of products is limited. So the market grows slowly. Russian economy ran into a low-growth trap and came only slowly out of it. The welfare of the entire population was sacrificed in exchange for the rise of several oligarchs.

China's strategy was to allow the coexistence of the central planning and the market. The presence of dual track, a plan track and a price track for resource allocation, caused the diversion of resources from SOEs to private sector. Russia privatized the SOEs with the attempt to create the incentives to maximize the efficiency of the resources allocation. However, the monopoly rent was far more attractive than the profit generated from the production and exchange under competition. So the initial rent holder "captured" the market and introduced monopoly. China did not restructure the SOEs until the 1990s, while the private sector gradually developed from the beginning of the reform in the late 1970s and early 1980s. Thanks to the dual-track system, the resources were transferred from the plan track to the price track and ultimately into the private sector so that the private sector could grow rapidly.

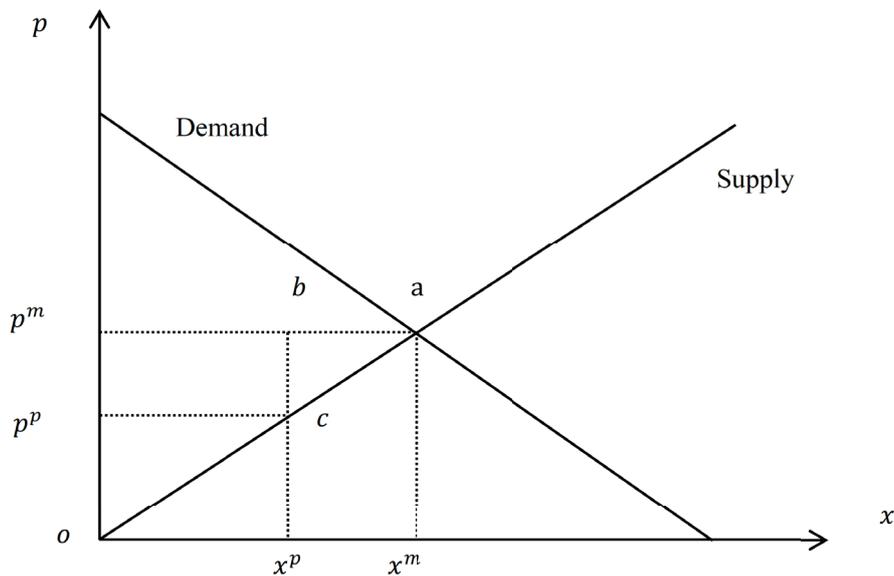


Figure 4.3 An illustration of shift of resources from plan track to market track

There is a representative commodity x . For the plan track, the price is set to be p^p , and the quantity of product to be x^p to achieve the efficiency. For the price track, market price is determined by demand and supply and is p^m in this model. So, the quantity of good x sold at the market price is $x^m - x^p$. And, producers, mainly the SOEs, get production surplus of $p^p o c$ plus $b a c$. For the SOEs, because they can sell excessive products and retain the profit, they expand production to make more profit.

Moreover, they strive to increase the share of price-track products in the production plan to maximize the profit. In doing so, the share of price track in dual track system is expanded and share of plan track is diminished. Besides, the political and industrial elites endeavored to acquire the rent of $p^p p^m bc$ by bringing the plan-track products to market. This is the so-called “state speculation”. These corruptive activities, together with inflation, gave rise to the political instability that forced the central government to accelerate the reform process. Although the “state speculation” was immoral and illegal, the price signal was less distorted through the speculation. Moreover, for the non-state-owned firms such as TVEs and private firms, they had a better access to resources. They could get the resources from SOEs or from the “state speculators” if SOEs refused to sell production factors to them. So, the dual-track price system facilitated the transition to the market economy and promoted the development of the private sector.

The big bang transformation did not fulfill the great expectation while the gradualist strategy, which was neither a well-prepared reform scheme nor a textbook transitional policy, succeeded. Why should it happen? The answer lay largely in the privatization strategy. The aim of the shock therapy was to privatize then-existing SOEs while the introduction of the dual-track pricing system resulted in the rise of a new private sector rivaling the state sector. So, Russia’s political elites sought rents by acquiring the ownership of SOEs. To the contrast, China’s political elites acquire rents by transferring resources from plan track to price track, thus facilitating the liberalization of prices.

Controversies persisted over the question of how former political and industrial elites could be compensated for their commitment to the reform. It was a very pragmatic question, yet often not one for open discussion due to its questionable morality. The political and industrial elites, if not compensated properly, would transform the reform into a rent-generating source instead of an efficiency-improving one. The essence of an acceptable compromise was that the compensation should take a form that did not affect economic efficiency. The dual-track pricing system, though producing serious corruption, did not impose any barrier to the liberalization of market. On the contrary, it did promote the growth of the private sector.

Policy experimentation

The concept of policy experimentation might be unfamiliar to a Western ear, but is frequently used in the Chinese official documents. The policy experimentation, in Chinese political context, refers to the policy innovation through the experimentation preceding to the institutionalization of the experimental program into the national policy. The superiority of the policy experimentation method is to obtain the experience about the policy innovation without risking any instability or crisis to the entire system. It minimizes the risk of the policy innovation by enabling the reversibility of policy change. And the cost of such trial and error process was

lowered as well.

In the capitalist democratic system, the policy process usually contains three stages: formulation, legislation and implementation. Yet, the legislation as a necessary component of policy cycle rules out the possibility of policy experimentation (Heilmann, 2008). The state-level policy innovation in federalist countries also relies on the legislation and is small-scale in most cases. It cannot be compared with the Chinese-style decentralized policy innovation that aims to impose a transformative change to the national economy. One distinctive feature of the Chinese political system is that the administrative authority is superior to the legislative and judicial authorities and is offered an enormous discretionary power with respect to the legislative and judicial issues. In China's legal system, the central government regulation forms a source of law and is potent without the approval of the legislative authority. For example, the State Council has the authority to issue administrative regulations. And various regulations, rules, and measures formulated and issued by the ministries are also accepted as formal sources of law. Besides, according to the administrative law, the local government regulations are coercive and effective upon punishment. They are indeed sort of "quasi-law". Under such circumstances, the policy experimentation could be a very effective and economic means to accomplish the policy and institutional innovation and it also enables the informal institution to penetrate the market in a way that the deficient formal institution cannot.

According to Heilmann (2008), the Chinese-style policy experimentation takes three forms: experimental regulation, "experimental points" and "experimental zones". I will go through these three forms to show how the policy innovation mechanism works in China. The literal meaning of experimental regulation indicates that some of Chinese government policy was provisional and experimental. Heilmann finds out that, during the first two decades of the reform, over 30% of regulatory documents contained the term "provisional" and "experimental" in the titles or specifies the issue relating to the experimental points or zones. So he comes to the conclusion that Chinese government adopted an experimentalist approach to the policy innovation. Only after the sufficient experience is obtained through the implementation of the experimental program, the experimental policy will be finalized and institutionalized. The statistic shows that the share of experimental policy in total regulations issued declined in recent years. It fell to 13% in 2006. Heilmann ascribes the decline to the growing institutionalization of experimental policies and the participation in the WTO. There is one more point worth mentioning. Putting the government law (Tiao Lie) aside, according to the protocol on drafting regulatory documents, the term "provisional" and "experimental" has to be marked in the titles of regulatory documents if the regulatory issue is mentioned in the official documents for the first time. In principle, the regulations with the experimental status are effective for two or three years. After three years, they will be abolished or revised and finalized and effective for another five years. In that sense, the "final" regulations are not final, but merely less experimental than the "experimental" ones. Unlike the laws, the

government regulations are usually more flexible (Shleifer). And Chinese government transforms regulatory document into a simple and effective tool of governance. They are short-term and based on the quick response to the changing environment. On the one hand, three or five years is the time required to obtain the sufficient experience about the policies to see if it is beneficial to continue with the existing policy. On the other, every three or five years the opportunities are provided to revise and fix the old policies that turn out to be deficient and non-adaptive in the fast-changing environment. Moreover, in the extreme and urgent case, regulations taking effect today can be abolished tomorrow if it caused some disastrous results. So a significant share of Chinese government regulations is “experimental”. This political setting is adaptive to the transitional economy, yet also leads to the government’s tight control over the economy.

The second form of the experimentalist approach to policy innovation is the “experimental points”. The “experimental points”, unlike the concrete experimental regulations and zones, is a philosophical term or as Heilmann put it, a technical concept. As he points out, the term “experimental points” or “proceeding from point to surface” indicates “experimentation with new policies or institutions limited to a certain policy area or economic sector and carried out in limited experimental units”.²⁴ The underlying idea is that the experimentalist approach is universally applicable with respect to introducing the new policy or imposing the transformative change. The object of the experimental program can be a zone, a sector or even a unit. For example, the experimentation limited to a specified area is the well-known strategy of experimental zones. The reform to replace the business tax with value-added tax started as a trial program in several industries such as transportation and IT and was universalized after several years of incremental experimentation. And the restructuring took place in selected SOEs before the entire SOE sector underwent the restructuring. In sum, the institutionalization of the method of “proceeding from point to surface” shows that the experimentalist approach is fundamental to China’s policy innovation and the transformative change initiative.

The last form of experimentalist strategy is the experimental zones. The experimental zones refer to geographical units where the policies inconsistent with the existing laws and regulations are allowed to be developed and implemented. The origin of experimental zones is the “opening up policy” which was implemented in an incremental way. In 1979, four cities, Shen Zheng, Zhu Hai, Shan Tou and Xia Men, were picked and announced to be the special export zones with the aim to attract investment from Hong Kong, Macau and Taiwan. In the next year, the special export zone was renamed to the special economic zone (SEZ). Shortly after that, Guangdong province was added to the list of SEZs. The SEZ experiment facilitated the inflow of the foreign capital by innovating the policies towards the fair treatments of foreign capital. Due to its effectiveness, the experimental zones method was institutionalized

²⁴ Heilmann, Sebastian, Policy Experimentation in China’s Economic Rise, *Studies in Comparative International Development*, Volume 43, Issue 1, March 2008, Pages 1–26

and various types of experimental zones were designated to handle different development issues. Among them, the most famous and striking one is Shanghai Pudong New Area. The innovative policy there turned acres of farmland into the most active business districts and technological parks. Recently, China (Shanghai) Pilot Free Trade Zone was considered a preparation for the deeper integration into the international economy. The experience obtained from the new experimental zone will be shared with the rest of the country, also in an incremental way.

As mentioned above, the policy experimentation method relies largely on the existing political system, particularly the central-local relationship. In a federalist system, the federal-state relationship is not shaped in a way that the state-level innovative policy can be universalized at the federal level. The independence of the state forms an obstacle and the institutionalization of policy involves the legislation, which almost eliminates the reversibility feature of the experimentalist approach. On the contrary, China's central government is capable of ordering the policy experimentation and universalize the policies at national level as the central government is bestowed the right to enact the law and the lower level of government the right to develop the "quasi-law".

The central-local relationship is key to the understanding of Chinese-style policy experimentation. China's employing the policy experimentation can be divided into two stages. Throughout these two stages, though the policy process remains the same, the underlying central-local interaction has changed. In the first stage, the considerable independence of the local governments enabled the bottom-up policy experimentation, which means that the policy experimentation was indeed not ordered by the central government but spontaneously carried out by the local organizations. And the spontaneous practice was imitated across regions. Finally, the central government institutionalized the practice at the national level. The household responsibility system, township and village enterprises and various local policy initiatives were integrated into the formal institution in that way. During this stage, the use of local knowledge and the learning process dominated the policy innovation. Even the experimental program ordered by the central government was designed and conducted by the local governments. However, in the second stage, with the fiscal autonomy undermined by the tax reform, the local authorities were worse off in the central-local bargaining. The ministerial control penetrated the policy experimentation. On the one hand, as the initiator of the policy experimentation, the bottom-up spontaneous practice was replaced by the top-down mechanism design. It deterred the use of local knowledge in the policy process. On the other, less discretionary power was bestowed upon the implementer of the experimental program. The coordination difficulty increased. Moreover, the policy process became more formalized and the legislative authorization was required to ensure the legitimacy of policy-making. Taking China (Shanghai) Pilot Free Trade Zone as an example, the legislative authority authorized the State Council to amend the law in relation to the administrative issue. And the implementer of the experimental program, the managing

committee of China Pilot Free Trade Zone, must apply for the approval of the central government bodies prior to the implementation of policy innovation initiative. So the ministries exercised a tight control over the experimentation.

The success of policy experimentation rested on incorporating the local knowledge into the national policy through the institutionalization of the adaptive practice. Hence, an institutional barrier is imposed on the innovation freedom for the local authorities if the ministries tighten the control over policy-making in the case that they acquire a superior position in central-local negotiation. As a result, the institutional adaptation to the economic development, which should be a result of the interaction among individuals, households, firms and central and local governments, would be disturbed.

4.4 Transplanting a Legal System

Though following the philosophy of “crossing the river by groping the stones”, China did not stop imposing the Western blueprint and developing the modern economic institution. The relation-based governance came in the form as the common beliefs and conventions but not formalized and institutionalized. On the contrary, China attempted to transplant the entire “rule of law” system from the Western country into Chinese social context. In the short run, the attempt failed because of the imperfect transplantation and also the conflict between the transplanted system and the existing society. In the long run, the growing market will drive the transition from the relation-based to rule-based governance. And the transplantation of legal system is necessary for pursuing the “rule of law” in a networked environment. Yet, as we may expect, Chinese legal system would not be a purely transplanted one but a blend of foreign blueprint and Chinese characteristics.

A legal system consists of three parts. They are laws, legal organizations and legal professionals. With respect to laws, during the early stage of the reform, the legislature focused on the regulations in relation to the government bodies and state-owned enterprises (SOEs). This sort of law was largely the heritage of command economy. It was reasonable to formulate and enact such laws because the economic activity outside of the state-controlled domain was not usual. During the 1980s, the legislative practice was affected both by the idea of state syndicate and the idea of market economy. As Clarke et al (2008) point out, the law enacted during the early stage of reform centered on the SOEs, including economic contract law (1981), enterprises bankruptcy law (1986) and law on the enterprises owned by the whole people (1988). Yet, with the private sector growing rapidly, the focus of lawmaking shifted to the free market transaction. There were two types of law governing the foreign-related and domestic economic issues, respectively. It shows that Chinese government regulated the foreign-related economic issue and the domestic market in different ways. However, when Chinese economy was deeply integrated into the world economy, the legislature sought the unification of laws governing the firms and economic activities. For example, contract law passed in 1999 replacing the economic

contract law (regulating the contractual relationship between domestic companies), foreign-related economic contract law (applicable when one of the party was foreign investor) and technological contract law. As Clarks et al point out, law coevolves with economy. The role of private sector in national economy has been changing over time. Accordingly, the regulations in relation to the private sector were amended for several times. So, the Chinese legal system, which started as a governance tool in the Soviet model, was gradually modernized to meet the requirement of the free market economy.

With respect to legal organizations, there are three major ones in China. People's congress is the legislative body, people's court the judicial body and people's procuratorate the public prosecutor office. Though the organizational configuration of the legal system bears the resemblance to the Western model, the underlying power structure is not the same. The cadre ranking system displayed the inferior position of judicial authority in comparison with legislative and administrative authority. The chairman of the Standing Committee of the National People's Congress, who is the head of legislature, is a member of the Politburo Standing Committee of the CPC Central Committee, currently ranked immediately after the President and the Premier. Yet the chief justice of the Supreme People's Court and the chief procurator of the Supreme People's Procuratorate are ranked as equal to vice-premiers only. They are not members of the Politburo of the CPC Central Committee, let alone the Standing Committee of the Politburo. In that regard, the Chinese political system is not a system of "checks and balances" based on trias politica principle. Moreover, within the judicial system, the judges are also differently ranked and the lower ranked is subordinate to the higher ranked as the lower level of court is subordinate to the upper level. The judicial branch's lack of independence may cause several problems that limit its role in the economic domain. Compared to the legal system, it was easy for the government to put its regulations into effect. As a result, the administrative branch took over some of legislative and judicial functions. And under such circumstances, the judicial branch may act "cooperatively" in favor of the interest of the administrative branch. As the judiciary fails to maintain judicial independence, the "rule of law" system is not ready to be formed.

The third problem that China's legal system faces is the shortage of legal professionals. The laws and legal organizations can be transplanted, but not the professionals. During the Cultural Revolution, China's higher education was suspended. Little legal education resource was available when the law schools were reopened. Amidst desperate shortage of qualified legal professionals, a lot of demobilized soldiers and other untrained personnel were appointed as judges (He, 1997). Unsurprisingly great difficulty ensued with the obvious lack of expertise and training. In recent years, the Ministry of Justice imposed a threshold for the entry into legal professions. It is necessary to have passed the National Judicial Examination to qualify for the position of judges. And the number of legal practitioners increased continuously. The number of students graduated from law schools has increased by

100 times over the last three decades. There were only 60,000 judges in 1981, which meant that every 10,000 Chinese shared 6.08 judges. In 2002, the number of judges had risen to 200,000. And after the reform, the number of judges decreased to 190,000 in 2004. Every 10,000 Chinese shared 14.69 judges. In many regard the number of judges has increased and may be seen as sufficient. However, some studies suggest that only half of the judges are actually trial judges. The non-trial judges are largely busy with administration and personnel management. The expectation is that the trial judges should deal with many more cases with the awareness of international standard practices.

The eroded judicial independence and the lack of professionals explains partially the marginalization of the “rule of law” system. However, the origin of the problems is the incompatibility between the transplanted legal system and the existing society. During the early stage of the development, it was too costly to initiate a transition from the relation-based governance to the rule-based one. The relation-based trading system was shaped to be in accordance with the local circumstances, serving well to secure the market transaction and lower the transaction cost. Moreover, the common belief in the “rule of relation” was formed and thus made a focal point in coordinating the expectation. So the equilibrium is highly stable and resistant to the moderate shock. In some cases, the legal practice was also affected by the networked environment. It was reported that the judges came out of office and sought the disputes in the rural areas or in factories (He, 1997). The aim of this practice is to make the judge look like a friend than a detached enforcer of justice, though the latter image is what the “rule of law” system found suitable. And sometimes a good relationship with the judges enhanced the prospect of winning a lawsuit. Over the last three decades, the legal system was of less importance than one may expect. Yet the shortcoming of the “rule of relation” system will amount to a significant obstacle to the further development as the market keeps growing. In the fullness of time, the institutional change will take place. Prior to the comprehensive transformative change, China’s legal system has been experiencing a great improvement. Greater independence, transparency and professionalism have been introduced into the legal system. It is hoped that the legal system will contribute more to China’s growth.

4.5 Summary and Implications for the Further studies

This part is entirely devoted to introducing China’s political system and its impact on the economic transition. As shown by the model of embedded market, the state is supposed to be between market and society. Given this intermediary role, the state determines how market is embedded in the social system. If the state takes a position against the endogenous/spontaneous institutional support to the operation of market from the social system, the market and society may both react strategically to the policies and changes the way they interact. However, without the institutional underpinning from bottom up, the market might not be able to grow to a considerable extent. In that sense, the state plays non-negligible and irreplaceable function in the

transitional economy and therefore should receive particular attention in the academic research.

While state is a highly abstract term, we understand it as consisting of two parts, namely, how the government is organized and the policy it implements. First, China's political system was characterized by a federalism with rather peculiar characteristics. The Chinese-style federalism is thought to be market-preserving as it introduced great local autonomy. Compared to the central authority, the local authorities had better access to the local information and thus were capable of innovating the policies or institutionalize the local best practice into the policies.²⁵ However, the over-decentralization of power could lead to the rise of the local protectionism. So China, as a party-state, solved the problem by exercising the tight control over the cadre management. The Party did not abolish the old system totally but mobilized the organizational resources inherited from the communist China to minimize the risk of instability. The decentralization of power was actually based on the fiscal decentralization. After the introduction of the fiscal responsibility system, the amount of fiscal revenue retained by the local authorities increased enormously. It re-defined the central-local relationship and furthered the decentralization. In the first half of 1990s, unsatisfied with the low revenue and weak voice in the central-local bargaining, the central authority reformed the tax system and introduced a new tax sharing scheme to adjust the allocation ratio. One consequence of the tax reform was that the ministerial control penetrated the local economy through the fiscal transfer. So a trend of centralization appeared to influence the economy in a negative way.

Following the discussion on the organizational feature of Chinese government, the policy that Chinese government is investigated in the second half of this chapter. The multi-layer structure of government enabled China's application of gradualist strategy which differed sharply from the big bang strategy adopted by Russia. China's gradualist approach to reform consists of two methods: the dual-track pricing method and the policy experimentation method. The dual-track approach allowed the coexistence of central planning system and market system and transferred the resources gradually from the state sector to an emerging private sector. Contrary to the massive privatization of SOEs resulting in creating a few oligarchs, the dual track pricing system only allowed the privileged class to generate the benefit from the resource transfer from plan track to price track. And the "state speculation" facilitated the transition to the free market objectively. The lesson from China and Russia's experience is that transferring resources to an emerging private sector is a better strategy than developing the private sector directly from the state sector.

²⁵ Theoretically, the central government has a better access to global information. But in some cases, the information available to the central government is collected by the local governments, therefore is not as reliable as the information at the local level as the local governments are motivated to filter or make changes to the original information. Of course the central government also set up the branches that are under its direct control. But it is costly for the central government to get information that way. The interaction between central and local government with respect to the information channeling is highly dynamic. And the strategy that both parties take varies in the concrete cases.

The second method is the policy experimentation. Thanks to the M-form of government, the policy experimentation could be limited to a zone, a sector or even a unit. The aim of introducing experimentalist approach is to control the risk of innovation and minimize the cost of trial and error. The experimental regulation, experimental point and experimental zone are three major forms of policy experimentation. In general, the policy experimentation method facilitates the institutionalization of bottom-up practice and incorporates the local knowledge into the policy process. However, as the ministerial control has been extended over the experimental programs, the policy experimentation might not be as effective as it once was.

It may be observed that China's political system as well as the reform strategy is quite well-designed for the local institutional innovation. It provides the opportunities that the relation-based governance took over the economic domain. As a result of the persisting culture and also the strong government, the legal institution was suppressed. Besides the eroded judicial independence and lacking of professionals, the transplanted nature of the legal system prevented itself from functioning effectively. However, as the market grows and the advantage of rule-based governance outweighs that of relation-based governance, the legal system will gain more importance and experience continuous improvement.

China's experience shows that the political system and the way it develops policies profoundly affect the transition into a market economy. In Imperial China, during the early stage of a new empire, the economic-freedom-enhancing policy was always the most popular one for its effectiveness in recovering the economy destroyed by the war. In 1978, China faced the similar question: how could the freedom be given to the economic actors and draw on their practice to develop effective economic institutions without affecting the reign of the government. As Deng put it, "whoever catches rat is good cat", "crossing the river by groping the stones", the governing party went through it with trial and error. So a free atmosphere was created and a variety of institutional innovation emerged from the interaction of various economic actors. This unique experience deserves further studying and should be a reference point of development strategies to the developing world.

Now we have finished part one "general characteristics of Chinese-style relational economy". This part has four chapters. The first chapter is an introduction addressing the questions we want to deal with. We argue that the relational culture plays a relevant role in smoothing the economic transition. Chapter two reviews four groups of literature and provides a conceptual framework for the later analysis. Chapter three shows how the relational system promotes cooperation and compare the relational system with the rule of law system. Chapter four is devoted to analyze China's political system and its impact on the transition. By dealing with Chinese-style relational economy from theoretical perspective and also its surrounding institutional environment (the government policy and the structure behind the policy-making), we

further and deepen our understanding of how the embedding of market in the relational system leads to the economic success, as China did in last three decades. And in the later chapters, we will study it from an empirical perspective. We pay attention to individual sectors and see how the relational culture affects the reform of these sectors and makes them prosper.

5. China's Agricultural Reform: From Collective Farming to Household Farming

China's transition to the market economy was initiated in the agricultural sector. The reason was simple. Agriculture met the basic demand of human beings. The Chinese could not afford a total collapse of the agricultural sector. It was a question of "to be or not to be". The famine during 1956-1958 indicated the horrible consequence of wrong policy. China's agricultural policy followed the idea of Leninism and drew on the practice of the Soviet Union, pursuing the centralization and collectivization of agricultural production. In the late 1950s, the radical policy eradicated the household farming. The collective farming system did not produce information as efficiently as the decentralized market to guide resource allocation. It also did not provide the peasants with sufficient incentives to work. Due to the institutional deflection, China's agricultural sector had grown slowly over the period of 1958-1978. During that time, political movement came one after another, destroying the production order to a considerable degree. By the end of the Cultural Revolution in 1978, the national economy was on the edge of collapse. In response, the agricultural sector took a spontaneous move towards reform with the aim to resume household farming. Judging the outcome of the reform, the leadership dropped the insistence on collective farming and endured institutional diversification. As a result, household farming was legitimated, taking the form of the household responsibility system.

In fact, the household responsibility system is not new to the scholars. Many academic contributions to the understanding of China's agricultural reform can be found in existing literature. However, most research focused on the effect of policies. Less effort has been made to deepen our understanding of the transition and its influence. So, my point is to find out why the transition to the household farming system was possible and how the household farming system affected the economy.

This chapter, as I said above, is devoted to the study of China's agricultural reform. In the first part, I review the working of the collective farming system in the pre-reform era. I focus on the institution of the people's commune. The scale of this social experiment has no precedent in history. Part two addresses the questions mentioned above. First, I try to understand the dynamic of transition to the household farming system. Second, I analyze the advantage of household farming over the alternative production modes. In addition, I discuss the role of institutional change in promoting growth, comparing the technological as well as market factors. In part three, I draw on a case study of the land market, which aims to offer evidence that social relation affects the market transaction. It also shows the limits of relation-based governance and the increasing importance of impersonal market. Part four shows the shortcoming of the household farming system and predicts the further evolution of the structure of agricultural production. At the end, part five summarizes and makes some suggestions for further study.

5.1 China's Agricultural Sector in the Pre-Reform Era: People's Commune and Collective Farming

From the ancient times up to 1949, land had virtually been privately owned in China. A few landlords took control over a large proportion of land. The aggregation of landholding was necessary and inevitable for economic purpose. Many peasants were turned into tenants who worked for the landlords, and were rewarded by a fixed share of the grain yield. Before the land reform carried out by the CPC, the landlords, only 5% of the population, owned 40% of the farmland (Chen et al, 2009). Hence, the desire for land was rooted deeply in the heart of Chinese peasants. When the CPC promised a future of “everyone is a landlord and work for himself”, the desire became a great incentive to help the CPC win the civil war.

After the founding of P.R. China, the communist party was ready to fulfill the promise. In 1950, the land reform was launched. In general, the land reform was no more than taking land from landlords and distributing it equally among tenants. This movement aimed to destroy the class of landlords. In 1952, the movement was near its completion. About 300 million peasants were entitled to farmland. The land policy equalized the position of individual households. However, the peasants working on the self-owned land were ill-treated in the movement, not to mention the landlords identified as the leisure class. By the end of the reform, land was segmented into small pieces and allocated to the individual households.

However, two problems arose thereafter. One of them was technical. The households were not able to afford the massive mechanization of agricultural production, which created a barrier to further improvement of productivity. The second problem was ideological. Socialism was based on the public ownership. The private ownership of land must be replaced by the public one. Moreover, the trend of polarization concerned the leadership. After the land reform, some peasants bought land from the market and employed landless peasants while some sold land and became tenants, again. Thereby, the disappeared class of landlords and tenants came back. As shown by an investigation report of Shanxi province, 19.5% of 42215 households sold their land due to the low living standard, disease, or natural catastrophe (Chen et al, 2009). That was a signal that the land reform failed. It was impossible for the leadership to swallow the failure. To prevent stratification, the leadership decided to accelerate the process of collectivization.

The first round of land reform was a one-shot redistribution of land among households. According to the Edgeworth box, which was later stressed by Coase Theorem, bargaining leads to economic efficiency regardless of the initial allocation of property, if the transaction cost is sufficiently low. What happened after the equal distribution is several rounds of bargaining and transaction. Hence, the leadership intended to introduce the collective farming system so that the market mechanism did not work anymore. The coercive institutional change raised the transaction cost and

the behavior of peasants changed accordingly. In particular, the people's commune was established, on the one hand, to replace the land tenure right with the public ownership of land. On the other hand, it should implement the economic plan from the top down and make decisions instead of households. The management of agricultural production was centralized so that the scattered local knowledge could not be used any more. In addition, not only was production made a part of the centrally planned system, but also the transaction. The state procurement system controlled the transaction of the agricultural products.

There were three stages of the collectivization movement. In the first stage, the primitive form of collective farming was established. The freedom to enter and exit had not been deprived. In stage two, the people's commune was formed. The utopian "communal dining system" was turned into a formal institution for a short time and ended up in a miserable famine. In stage three, a more pragmatic "work points system" replaced the utopian institution. However, although it rescued the agricultural sector from a total collapse, it could not ensure its growth.

People's Commune

In 1953, the official document with the title "Decision on the mutual-aid in the agricultural production" was issued. Different types of mutual-aid teams were formed to improve the efficiency of agricultural production. During the early stage of collectivization, peasants were allowed to form the primary farmer cooperative. They offered land and capital for public use and were recognized as shareholders of the cooperatives. And they joined and exited the cooperative freely. In 1955, a scheme of "advanced farmer cooperative" was on the agenda. Compared with the primary farmer cooperative, the advanced farmer cooperative abolished the private ownership of land and capital such as cattle and machinery. The members of the advanced farmer cooperative were solely employees and only received a fixed wage for their labor.

The collectivization movement was too radical.²⁶ Besides the ideological need, the leadership also sought eagerly the road to a strong modern country, and came to the conclusion that capital should be transferred from the agricultural to industrial sectors to promote the industrialization. A state-owned or collectively-owned agricultural sector was much easier to control. That thought also motivated the leadership to go such a radical way.

With an over-optimistic attitude towards the collectivization, in 1958 the leadership decided to merge several cooperatives into a people's commune. A people's commune

²⁶ The increase rate of units of advanced farmer cooperative was high. The turning point was the year of 1956. In that year, the advanced farmer cooperative became ranked as the most popular type of production unit. And in 1957, most of the primary farmer cooperatives were also turned to be advanced one. Actually, during the first phase of the collectivization movement, the overall productivity of agricultural sector was improved. The collective farming was thus thought to be more efficient compared to the household farming. The advantage of collective farming was the increasing capability to coordinate the public project. Besides, the collective farming also benefited from the scale of economy and the specialization, though not that much.

features a big size, collective ownership, and centralization.²⁷ Behind such institutional change imposed from the top down, we can find the idea of the “state syndicate”. The leadership thought that agricultural production could be organized in the same way as industrial production. What happened afterward told us that they were absolutely wrong.

In a people’s commune, individual households owned minimal resources. Most of the resources were controlled by the commune. Production and consumption were centralized. Thousands of peasants worked together following the plan proposed by cadres. However, the agricultural centralization did not yield better results, but caused a decline in production efficiency. Moreover, the practice of consumption-sharing was also highly irrational. During that most radical period of collectivization, the so-called “communal dining room” was set up. Commune members had free meals in the public dining room. This income-pooling, consumption-sharing structure of the commune was disastrous. Income-pooling created a lot of motivation for the farmers to shirk and thus output declined. Meanwhile, consumption-sharing resulted in overconsumption. The commune members did not allocate consumption over time, but maximized current consumption.²⁸ The decline in output, the overconsumption and the urban bias in the distribution of grain gave rise to a severe famine.

Lin, in his seminal paper (1990) on collective farming, has pointed out that the implementation of a new policy marked the turning point of the collectivization movement. Thereafter, the productivity of the agricultural sector fell and never came back to the original level until the 1980s. This policy was the deprivation of the right to withdraw from the commune. At the initial stage of collectivization, farmers had the right to join the cooperative or withdraw the membership freely. But after the cooperative had been transformed into the commune, the right to quit from the collectivity was deprived. According to Lin, the compulsory nature of the people’s commune changed the way of interaction within it from a repeated to a one-shot game. The collective farming benefited from the economies of scale, but also increased the monitoring cost. However, if the individual households were allowed to withdraw from it whenever they want, the withdrawal of membership would be a punishment to the farmers who stayed in the cooperatives because it lowers the average return to scale. By imposing the sanction on the improper behaviors, the repeated game enables a self-enforcing mechanism. But a one-shot game changed it fundamentally.

Based on the idea of Macleod (1988), Dong and Dow (1993) argued the opposite. They pointed out that it is the exit cost, not the right to exit, which prevented the shirking activities. Macleod indicated that households or firms entering into a contractual relationship should not be able to terminate it freely. The exit cost helps to

²⁷ Mao Zedong said, “The people’s commune is big in size. And any outcome should be shared by all the members”.

²⁸ The peasants know that overconsumption was not the most beneficial strategy. However, they were not sure if the others would reserve enough grain for the future. So, in the face of risk, the peasant raced to consume more grain until the marginal utility became negative. It is a stag-hunt game and the non-cooperative strategy is chosen by both sides in the equilibrium.

sustain the cooperation. Otherwise, the cheater could always play the strategy of “hit and run”, cheating by the end of the game and running away. It is right to say that contract enforcement is key to the success of market transactions. But the prerequisite is that an individual enters a contractual relationship freely. He must also be informed of the possible consequences of entering into such a relationship, including the exit cost. The people’s commune was different in two aspects. One was that peasants were forced to join the commune. The other one was that the exit cost was prohibitively high. As a matter of fact, the contract was incomplete. Considering the environmental change, not enforcing a contract could be sometimes mutually beneficiary. And the trading party is willing to pay the exit cost. But the right to pay such a cost was also deprived. Macleod and his proponents did not capture the nature of Leninism, the philosophy of the “state syndicate”. In Macleod’s model, the cheater exploits the fellow farmers for only one time. But in Lin’s model, a Nash-equilibrium dominates over time. The mutual punishment continues not due to the evil nature of human beings, but due to the disastrous institutional design.

Scholars used to focus on the incentive problem arising from the enforcement of collective ownership. However, the commune was also a kind of fragile institution for its malfunctioning management system. It centralized the management at the top and was big in size. Hence, one of the problems was that local information could not be channeled to the top. In most of the communes, the cadres knew little about farming work, but proposed the production plans. They were also not familiar with the ability of the individual peasants. But the peasants could only follow the decision they made, and saw things go wrong. If the peasants made suggestions, the information was only slowly forwarded to the cadres. The village formed a unitary system with a simple hierarchical structure replacing the original network structure and its ability to process information was not as good as before. The big size of the production unit made the situation worse. Not only did channeling of information involved higher cost, but the monitoring cost increased enormously with the size of the organization. In sum, the people’s commune turned out to be totally irrational.

A moderate version of people’s commune

The radical collectivization movement caused a sharp decline in agricultural output. The shortage of grain, together with the urban bias in grain distribution intended by the authority to promote the radical industrialization, the so-called “Great leap forward” movement, resulted in a severe famine in rural areas. It gave the CPC leadership a lesson so that they had to acknowledge that there was a law governing the economic system. The institution governing the agricultural production should cope with the specific feature of agriculture. Family/kin-based culture was a tradition supporting the operation of agricultural society. However, the collectivization undermined the role of family and established a hierarchical system based on the received individualistic culture. The practice shows that the economic efficiency diminished with the increasing centralization. Hence, reform was carried out to avoid

the further collapse of the agricultural sector.

One of the reform strategies was to downsize the people's commune into production brigades and teams.²⁹ Perkins and Yusuf (1984) suggested that separating the commune into small accounting units could improve the efficiency. As aforementioned, the use of local information became more efficient when the size of the production unit decreases. In fact, a multi-layer system was developed to substitute the unitary system. Moreover, in a smaller organization, supervision became easier and thus involved a lower cost.

The other reform strategy was to address the incentive problem. The "work points system" was introduced to make the wage dependent on the contribution. The team distributed the total income among households twice a year, after summer harvest and by the end of the year. The accountant calculated the value of one labor-day, which was ten work points, by dividing the total income by the sum of total work points. The household multiplied the work points it earned with the value of one labor-day. It was the total income for a household. The calculation method and the distribution mechanism were simple. The difficult part of this system was how to measure the contribution of individual peasants. They used two proxy values, the quality of labor and the difficulty degree of the task. In fact, the "work points" did improve the productivity and made the agricultural sector recover from the crisis.

However, the "work points system" was not perfect. Using proxy values to evaluate the effort gave rise to incentive problems. First, the market competition was, to some degree, replaced by the competition for work points. It created motivation for individual households to bargain for more work points in the commune meetings. In order to avoid disputes, only the basic criteria such as gender and age were used to evaluate the quality of labor. Talent and special ability would not be priced in the system. Moreover, because the number of work points was associated with the number of tasks, peasants were motivated to do as many tasks as they can, yet paid little attention to the quality of tasks that they had done. Hence, more labor time might result in less achievement. A case study (Zhang, 1998; Zhang 2007) showed that, in Zhejiang province, the peasants spent a lot of time on farming. But the output was not

²⁹ In 1960, the central committee of the CPC issued an urgent instruction in relation to people's commune, indicating that the basic accounting unit was production brigade. A people's commune consisted of three levels of organizations. They were people's commune, production brigade and production team. After the reform, production brigade was the basic accounting unit while production team the basic production unit. Production factors such as land, cattle, labor forces and tools was owned by the brigade. And the team was allowed to lend them from the brigade. However, production brigade as an accounting unit would equalize the income of the teams. So, the production teams had little incentive to expand production because the excessive output would be distributed equally among the teams subordinated to the same brigade. A production team should maximize the income derived from other teams' contribution to the production and minimize the loss caused by the excessive production. For a team, to be conservative toward the production was a superior strategy. But for a commune, it was not good news that every team produces conservatively. So, in 1962, the central authority decided to take one more step toward decentralization. The production team became both the accounting unit and production unit, responsible for the organization of production (resources allocation) and income distribution. This production-team-based system operated smoothly until the economic reform in 1978.

as high as one might have expected.³⁰

State procurement system

Besides the collectivization movement, a state procurement system was established to make the exchange of grain under the control of the central planning bureau. The state procurement system was first established in 1953 to solve the shortage of grain in the urban areas. Before the state took over the allocation of agricultural products, there existed a free market for grain and other products. However, the output of the agricultural sector was not sufficient to feed the whole country. Particularly in 1953, the volume of grain yield declined due to the natural catastrophe and the institutional defection. The peasants increased the family grain reserve and refused to sell grain and other agricultural products to the state. Therefore, the urban areas, relying on the food supply of the agricultural sector, suffered from malnutrition. To remedy the situation, the government developed the procurement into a policy. It cut the food supply in the rural areas and transported the grain to the urban areas.

This policy was originally a temporary one to deal with one incident. However, it was not abolished after the recovery of the agricultural sector. To the contrary, it was institutionalized into a state procurement system. The aim of the policy was also changed. With the quick increase in the urban population, the shortage of grain and other agricultural products became a severe problem. Furthermore, the industrialization required quick accumulation of capital. The state procurement system was one of the very efficient political means to shift resources from the agricultural to the industrial sector. In such a system, peasants were obliged to sell nearly all the products to the state at a low price set by the policy. They were only allowed to consume a small part of the output and suffered from starvation. In doing so, the output of the agricultural sector was transferred to the industrial sector at a very low price that was significantly lower than the market price. The nature of the distribution system was a rationing system. The consumption of agricultural products had to be rationed in the absence of a price mechanism to balance supply and demand. The peasants, as mentioned, were allowed to retain a small part of the output to feed themselves. Urban inhabitants received coupons to exchange with agricultural products. The total volume of the grain and other products consumed by urban inhabitants, as well as peasants, were determined by the central plan.

The collectivization movement had destroyed the peasants' incentive once, and the urban bias underlying the distribution system destroyed their incentive for the second time. According to the study of two scholars (Xu and Shen, 1993), the value of output

³⁰It may also remind of the centralized production system in former Soviet Union. The plan plays a central role in allocating resources. As a result, the workers attempt to fulfill the plan in a most efficient way. For example, the plan said that one ton of a certain gadget must be produced in a day. The worker would produce the large-sized gadget so that they only needed to produce fewer. However, the small-sized gadget may be demanded urgently while the large-sized one useless. It can be also compared with the "publish or perish" pattern in Chinese academic circle. The scholars needed to publish papers in exchange for "work points". So they never tried to handle the difficult problems. The number of papers published increased while the true contribution was never made.

transferred from the agricultural to the industrial sector reached 44.81 billion Yuan.³¹ The experts from the ministry of agriculture also confirmed that price scissors deterred the development of towns and villages. They estimated that the value of property owned by the people's communes was 27.16 million Yuan, 80% of which was contributed by the farming land. The average value of property owned by a household was no more than 550 Yuan, and the average annual income per peasant was only 70 Yuan.³² The peasants contributed to the growth of the industrial sector at their own expense, and the income gap between farmers and urban inhabitants (employed in the industrial and service sectors) was widened from 1:2.6 to 1:2.9. In that sense, the peasants were sacrificed for the industrialization.

5.2 The Household Responsibility System

In China, household farming was an old tradition until the collectivization movement destroyed it. The collectivization movement had almost fully destroyed the agricultural sector. To cope with the irrational policy, in 1956 some villages practiced household farming again. In the advanced farmer cooperative, the measurement of individual contributions was a problem. To deal with it, the size of the accounting unit was slimmed down several times, from the cooperative to the team level, from the team to the household level. At last, the household took control over agricultural production. Household farming resumed in the Anhui, Sichuan, Jiangsu, Zhejiang, Hebei and Guangdong provinces. However, in the following year, the central committee of the CPC, holding the opinion that the household farming was anti-collectivization, eradicated the practice.

Yet, it was difficult to eradicate the culture as it implied the rationalization of human behaviors. In the summer of 1959, the "Great leap forward" mania faded. The disappointment from the decline in grain yield turned into the incentive to change it. Once again, the principle of "absolute equality" towards income distribution was questioned. In some villages, households were granted autonomous rights. But the practice ended up in failure. As long as the ideological bias persisted, the practice of household farming would not be legitimate. Hence, the tension between spontaneous actions and ridiculous policy lasted over the period of collectivization.

In 1978, a famous event unveiled the drama of the agricultural reform. In that year, a severe drought devastated grain in Anhui province. In that environment, 18 peasants in Xiaogang village signed a secret contract to allocate the collectively-owned land and other resources among households. They committed to enforce the contract by pressing the blood fingerprint on the document. Among these 18 peasants were also

³¹Xu, Chongcai, Taiji Shen, Lun Woguo Gongnong Chanpin Maoyi Tiaojian ji qi Wanshan: Jianlun Woguo Gongnongye Xietiao Fazhan de Duiche (On the condition for the trade in industrial and agricultural products in China: also on the strategy for balancing the development of industrial and agricultural sectors), *Caimao Jinji (Finance and Trade Economics)*, Issue 12, 1993, Pages 45-51

³²Tang, Renjian, Yanxin Huang, Zhonghai Wang, Xinhui Zhang, Zhongguo Nongye Zhengce Gaige de Xitong Kaocha (The systematic investigation on the reform of China's agricultural policy), *Nongye Jingji Wenti (The Agricultural Issues)*, Issue 9, 1992, Pages 46-52

cadres standing out to share the risk. By the end of 1979, in Xiaogang village the volume of grain yield reached 133 thousand kilograms, which was equal to the total volume of grain yielded between 1955 and 1970. The annual income per capita was 400 Yuan, much higher than that in 1978, which was only 22 Yuan.³³

The story of Xiaogang village became exaggerated over time. But the truth was not any less exciting. Anhui was the first province to engage in the agricultural reform. Three reasons explained the bold actions towards reform. The first reason was the drought. The natural catastrophe drove the farmers to the edge of survival, so they could not think of the political consequence of their illegal practice. The second reason was the participation of the cadres. They could practice household farming without drawing the attention from the upper level of the administration. The village was in the political mist, and the peasants were further incentivized while sharing risk with the cadres. The third reason was the ideological change. Wan Li, then the first secretary to the Anhui committee of the communist party, acknowledged the success of household farming and did not stick to the political correctness of collectivization. Moreover, he reported the success of household farming to the central authority. After the Cultural Revolution, the conservative wing of the party seized the power. The radical interpretation of communism was replaced by a pragmatic one. The leadership embraced the new idea that could help China to recover from the economic recession caused by the political movements. As Deng Xiaoping put it, “Some comrades are concerned if allowing the household farming would have a negative effect on the collective economy. I think this concern has no reason.”³⁴ Deng focused on the improvement of productivity and did not discriminate among various organizational forms of production. Household farming was legitimated and institutionalized firstly in Anhui province, then the whole country. In 1982, the central committee of the CPC issued a document, pointing out that “the establishment of responsibility system overcomes the free-rider problem in the collective economy, and also the problem caused by the over-centralization in management.”³⁵ In the following year, the central committee issued a second document on household farming, announcing, “Responsibility system has the property of centralization and decentralization, providing the peasants with an incentive to produce while retaining the public ownership over resources.”³⁶ What the Party documents said on the household farming can be compared with Lange’s argument in the debate dated back to the 1920s. Lange (1936) had argued that the Socialism can develop a trial-error-based method to find price in a simulated competitive market. What he said implies that

³³The statistic is available under: <http://cpc.people.com.cn/GB/64093/64387/10345382.html>. It is the website of People daily, the official newspaper of the government.

³⁴Deng, Xiaoping, *Selected papers of Deng Xiaoping*, People’s press, 1983, p275

³⁵Party Documents Research Office of the CPC Central Committee, Development Research Center of the State Council, *Xinshiqi Nongye he Nongcun Gongzhuo Zhongyao Wenxian Xuanbian (The selection of documents in relation to the agriculture and village)*, Zhongyang Wenxian Chubanshe (Central Documents Press), Beijing, 1992, pp115-116

³⁶Party Documents Research Office of the CPC Central Committee, Development Research Center of the State Council, *Xinshiqi Nongye he Nongcun Gongzhuo Zhongyao Wenxian Xuanbian (The selection of documents in relation to the agriculture and village)*, Zhongyang Wenxian Chubanshe (Central Documents Press), Beijing, 1992, p165.

market is not incompatible with Socialism. But to make the simulated market operate, the economic freedom should be given to individual actors, including families, firms and consumers. And in that circumstance, the central planning body can calculate prices properly using trial-error methods.³⁷

What Lange proposed find eventually an experimental place. As indicated by the official documents, it was different from the traditional model in some aspects. China was a socialist nation so the household farming system had to contain socialist elements. It was distinctive by the collective ownership of farming land. In the practice, the land use right was transferred to households through contracting. The households had to pay the tax and fees to the state and handed over a fixed part of grain yield to the collectivity. The rest of the output went to the household. That was, in nature, a share-cropping contract. The Chinese characteristic here was that the collectivity was the landlord, so the village committee was granted the right to re-distribute the land if necessary.

Anyway, the household responsibility system succeeded. Taking Anhui province as an example, the number of production teams that reverted to household farming totaled 1200 in 1978. In the next year, the number jumped to 38,000, about 10% of the total number of teams. By the end of 1980, 70% of the production teams in Anhui province had shifted from collective farming to household farming. Other provinces like Sichuan, Guizhou, and Gansu also began to accept the advantage of household farming. In 1980, 20% of the production teams in the whole country reverted to household farming. The ratio increased to 50% in 1981 and 95% in 1983. Within five years, household farming triumphed over collective farming.³⁸

The dynamic of transition to the household responsibility system

The household responsibility system emerged from the practice of the peasants. It was a spontaneous institutional innovation from the bottom up. The authority legitimated and rationalized the institutional innovation from the top down. Lin distinguished between induced and imposed institutional change. Induced innovation was the main source for institutional change while the approval of the state helped to institutionalize the informal practice into a stable equilibrium. In fact, if the state opposed the induced institutional change, it would have raised the cost of institutional change politically. The CPC had practiced it for several times with the aim to eradicate the cultural endowment. But the ideological change, if not driven by the environmental change, was slow (Aoki, 2001). So I will show the interaction between the state and the households leading to the re-introduction of the household farming system. The model I present here is not a regular economic model, but involves consideration of the political dimension.

³⁷ Lange, Oskar, On the economic theory of socialism: part one, *The Review of Economic Studies*, Vol. 4, No. 1 (Oct., 1936), pp. 53-71.

³⁸ Chen, Xiwen, Yang Zhao, Dan Luo, *Zhongguo Nongcun Gaige 30 Nian Huigu yu Zhanwang (On the history and future of China's rural reform during 30 years)*, People's press, Beijing, 2008

One of the most relevant features of the hierarchical system is that information is asymmetrically distributed across different levels of administration. Meanwhile, the goal also differs among households, local authorities, and the central authority. Hence, I assume that the households, the local authorities, and the central authority have different information sources and goal functions. The households choose the level of effort to maximize the output. However, the freedom to choose is limited for households in the model. The households' only response to the institutional environment is shaped by the government policy. Hence, the level of effort is determined by the institutional factor. Further, the institutional factors affect the output not only by influencing the incentive of households, but also by changing the organizational form of production. Thus, the function of the output is as follows:

$$Y = f(e(I), I) \quad (1)$$

Where e denotes the effort, I denotes the institutional factors and Y denotes the output. The institutional factor I is chosen by the central authority. But the policy is to be implemented by the local authorities. They can decide to which degree they implement the policy thus influencing the value of I . Given the value of I , the household chooses the level of effort e . Only when the local authorities cover up the practice of the households can they deviate from the collectivization policy.

The local authorities cannot observe effort, but only the amount of output. They are much more an information intermediary than a decision-maker. They neither choose the level of effort nor the value of institutional factor. Their job is to pass the local information to the central authority and implement the policy developed by the central authority. However, playing the role of information intermediary, they are able to filter information and thus influence the decision-making at the top level. I assume that the local authorities don't understand the policy. They implement the policy because they would be punished if they don't. And if the monitoring is not perfect, the local authorities can tacitly approve the reversion to the household farming if it helps to increase the output. In their goal function, they pay as much attention to the output level as the households do. So the goal function is described as follows:

$$H = \begin{cases} Y(I) & \text{if } I_H = I \\ Y(I_H) - aS & \text{if } I_H < I \end{cases} \quad (2)$$

Where S denotes the punishment imposed by the central authority if the local authorities have not implemented the policy; a denotes the probability of the punishment; I_H denotes the level of centralization chosen by the local authorities. The output level concerns the local authorities since they would be under great pressure if the grain is not sufficiently provided. On the other side, if they turn a blind eye to the improper practice, they would be punished by the central authority. However, the local authorities can filter the information channeled to the central

authority and allow the households to engage in some practices contrary to the policy. So the central authority may not know what happens with the probability a . a varies across the local authorities. In general, the parameter a is affected by the cooperation between households and local authorities. Thus, a was low if the traditional culture persisted in the area. The common cultural belief created more motivation for the local authority to cover up the return to the household farming. And those “red zones” during the civil war featured a higher a . In some cases, a is so high that $H = Y(I)$ is the function that the local authorities would choose to follow.

Given the goal function of the local authorities, we can reformulate the goal function of the households as follows:

$$Y = \begin{cases} f(e(I_H), I_H) & \text{if } I_H < I \\ f(e(I), I) & \text{if } I_H = I \end{cases} \quad (3)$$

The equation (3) shows that the households would revert to the household farming as soon as the local authorities allow them to do so. If the insistence on the ideology hurts the economic performance, the households would probably drop it. So the only way to make the households not to deviate from the state policy is to exercise external monitoring and eventually the coercive power as well.

On the top of the hierarchical system is the central authority. As aforementioned, China’s political system features an M-form. In general, the central authority receives the information from local sources and develops policies based on such information. The goal function of central authority consists of two parts. First, the central authority pays attention to the economic performance on the ground that the economic recession would cause the crisis of governance. Second, the CPC was formed to build a communist paradise. So the policy also serves to pursue the political goal. Hence, the goal function of the central authority is as follows:

$$G = Y(I) + P(I), \quad \frac{dY}{dI} > 0, \quad \frac{dP}{dI} > 0 \quad (4)$$

Where P denotes the political goal. And I assume that the economic and political goals are independent of each other. To analyze the political dynamic with the model, we should, at first place, clarify what the institutional factor refers to. In the model, the institutional factor is specified to be the degree of collectivization. The strategy of collectivization, on the one hand, is used to improve the economic efficiency. The central authority learned economics from the Soviet Union and tried to transplant the industrial production mode to the agricultural sector. So, creating a huge-sized commune was the best development strategy they could image. On the other hand, the collectivization was thought to be the early stage of the development of the communist society. Hence, the strategy of collectivization is necessary to accomplish the political goal.

So, at the first round of interaction, the central authority thinks that the collectivization promotes both the economic and political goals. It takes the first move and centralizes agricultural production to the maximum degree. Here I assume that the maximum degree of centralization is externally given. The local authorities fully implement the policy. So, the value of I is maximized for the goal function of local authority and households. However, the households find that the output declines after the collectivization due to the distorted incentive structure and information structure. Figure 5.1 shows the outcome of the first round of the interactions.

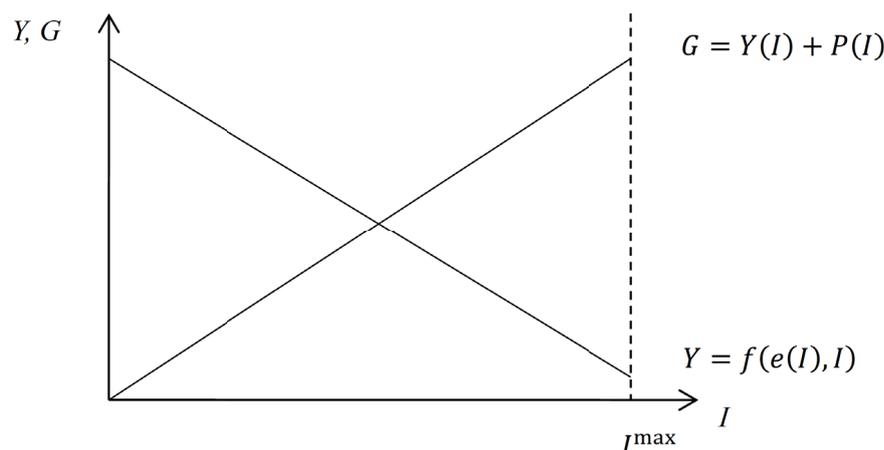


Figure 5.1 An illustration of collectivization movement in the first round

The downward sloping curve illustrates the relationship between the collectivization and the level of output in the reality, while the upward sloping curve shows how the central authority perceives the same relationship. So, the central authority and the households have a different optimal degree of centralization. For the central authority, the maximum output, Y^{\max} , will be achieved by increasing the degree of collectivization to I^{\max} . However, for the peasants, the over-centralization of production results in the decline in the volume of output. The actual volume of output is Y^{\min} . There is a large gap between Y^{\max} and Y^{\min} . During the “Great leap forward” period, the press broadcasted that the productivity of the agricultural sector had improved rapidly. The central authority was satisfied with the great achievement and furthered the irrational practice. On the other side, the peasants suffered from the shortage of the food and some died of malnutrition.

The local authorities, conscious of the institutional flaws and its disastrous consequence, responded in order to mitigate the crisis in the second round of interaction. They responded in two ways. First, they provided fake information to the central authority showing that the collectivization was a successful policy. In doing so, they attempted to avoid punishment from the central authority. Second, they relaxed the restriction on the household farming to mitigate the production crisis. But they only did this when the probability of being punished was sufficiently low and the

benefit generated from the institutional shift was sufficiently high. Under certain circumstances, it was rational for the local authorities to bear the risk of reverting to the household farming. The following figure provides a detailed explanation.

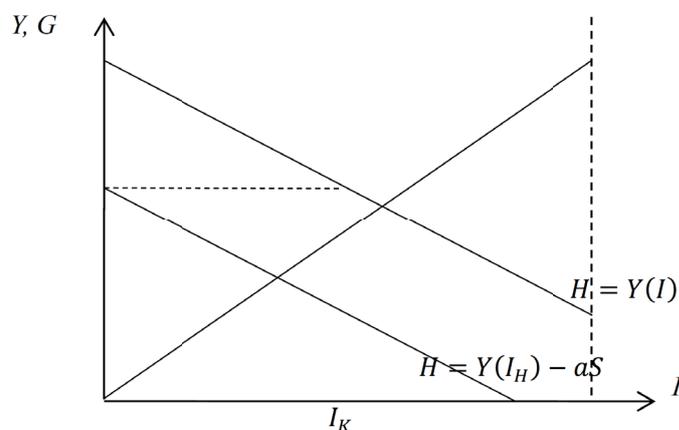


Figure 5.2 An illustration of collectivization movement in the second round: case 1

Figure 5.2 illustrates the second round of interaction. The local authorities find that the productivity declines sharply due to the collectivization. Contrary to their predictions, the collectivization movement generates an economic recession. Hence, the local authorities try to slow down the implementation of the radical policy. The cost of covering up the spontaneous practice of households is the punishment from the top down. Only when the benefit of institutional deviation exceeds the cost incurred by the punishment, would the local authorities choose to bear the political risk. The point I_K presents a threshold value. If the value of I chosen by the central authority is higher than I_K , the local authorities would choose to cooperate with the households and allow them to engage in household farming. If the value of I is lower than I_K , the local authority would implement the policy without any attempt to deviate from it. So, as mentioned earlier, the parameter a is important as it determines the value of I_K . Implicitly, it measures the degree to which the authority can endure the consequence of the collectivization policy. In the case of the high probability of being punished, combined with the harsh punishment, the local authority would not betray the ideology of communism. Figure 5.3 illustrates that kind of cases. However, if they decide to deviate from the instruction, they would introduce the household farming system, but not put forward a moderate reform scheme, which means they choose the point T as the new equilibrium.

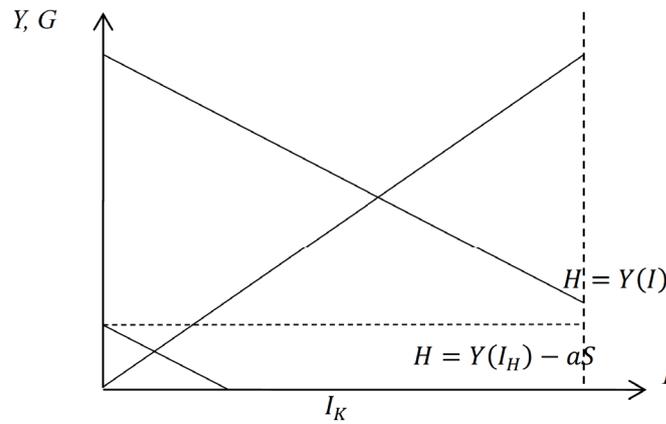


Figure 5.3 An illustration of collectivization movement in the second round: case 2

Let us compare the model economy with the real economy. First, the parameter a varies across the local authorities. As aforementioned, the value of a depends on the degree to which the local authorities were captured by the rural communities. If they cooperated tightly, the local authorities were willing to bear the risk of deviating from the instructions from the top down. However, the traditional order was in fact replaced by the communist organization, which changed the link between households and local authorities fundamentally. In that kind of environment, the value of a was supposed to increase. Anyway, the tension resulted in the temporary reversion to household farming. From 1956 to 1962, China experienced three waves of bottom-up institutional transition from collective farming to household farming. The Anhui, Sichuan, Jiangsu, Zhejiang, Hebei and Guangdong provinces engaged in this “underground” agricultural reform. In most areas, the household farming system was re-introduced. And in some areas, the reform was moderate. They only decentralized the production to the team level.

An economic system works usually on the basis of a set of widely accepted rules. They can be laws, social norms, etiquette, and something like that. But, a collective farming system was enforced by the coercive policing power. There was no common belief formed from the working of the collective farming system as long as the gap between I_H and I existed. And the direction of institutional change depends largely on the decision of the central authority. However, the practice of households and local authorities forms a source of information that is also important to the decision-making of the central authority. At the third round of interaction, the central authority comes to realize two truths by the observation. First, the relationship between the collectivization and the productivity should be negative. Second, the low efficiency underlying the commune-style collectivization created a lot of motivation for the rural households and local authorities to deviate from the state policy. They would

challenge the policy again and again as long as the degree of collectivization exceeds the average threshold value. But some of the local authorities, while having a high value of a , choose to go on with the collective farming and end up in the sharp decline of grain yield. Hence, the central authority realizes that the collectivization affects the productivity in a negative way and thus modifies the goal function. To maximize the modified goal function, the central authority should choose the value of I that meets the following condition:

$$-\frac{dY}{dI} = \frac{dP}{dI}$$

Let I_E denote the degree of collectivization in equilibrium. If the political achievement accounts for a small share in the goal function, I_E is probably smaller than I_K . In that case, the central authority would choose a moderate degree of collectivization and the local authorities would also follow. However, as a matter of fact, the institution of the people's commune is not a way to, but a part of the communist dream. So, the share of the political concern in the goal function could be sufficiently high so that I_E is higher than I_K . Interestingly, though the central authority wants to fashion an institution with more collectivist elements, it would accept a moderate scheme in practice because the over-collectivization creates the motivation for the households and local authorities to revert to the household farming. China experienced it three times and learned that a moderate scheme might be acceptable for both central and local authorities. If the central authority chooses I_K , there is no reason for local authorities to move away from this point.

Compared to the model, the collectivization movement in China showed a similar pattern. After several years of experimenting with the people's commune, the central authority acknowledged the failure of the over-collectivization. The reform was carried out in two ways to deal with the institutional flaws. First, the production unit was slimmed down to the team. Thus, monitoring and management costs were reduced enormously. Second, the work points system was introduced to create incentives for the peasants. In doing so, productivity was moderately improved. This less radical strategy of collectivization generated a stable equilibrium. Further decentralization was not allowed by the central committee of the CPC. According to Mao, slimming down the production unit to the team solved the efficiency problem perfectly. It was not necessary to slim it down further to the household. Any form of further decentralization would shake the foundation of the collectivist economy.

So, the households must await the ideological change. In 1978, the conservative wing of the CPC decided to terminate the Cultural Revolution and focus on economic development. Deng suggested that economic development should not be affected by the controversy over the ideology. He pointed out sophisticatedly that household farming was not necessarily associated with capitalism. Thus, the central authority removed $P(I)$ from the goal function and allowed the households to take the

responsibility of production. As a result, the household responsibility system emerged.

This model has several implications. First, the decentralized form of economy is the most efficient as it maximizes the utilization of the local information. Second, the ideology affects the economic performance. In some cases, specific ideology is conducive to the economy, for example, the protestant ethic, while in some other cases economic growth is deterred by the ideology. So the model suggests the significance of ideological change to the economic reform. In China's case, the sharp turn to the pragmatism removed the political obstacle to the market reform so that the reform could be furthered without disturbing the social order. Third, the local authorities play an important role with respect to the information channeling and policy implementation. More autonomous right is granted to the local authorities, more flexibility is added to the political system as well as the economic system to avoid the impact of irrational policy made on the top of the hierarchical system. Mao strove to decentralize the political power and ended up in creating an M-form political system. Yet, this multi-layer structure produced an obstacle for the implementation of his own policy. At last, Mao, the most powerful leader ever, compromised while facing the uproar among the local authorities and households.

The advantage of household farming

After relaxing ideological control and approving the agricultural reform from the bottom up, the central authority institutionalized the spontaneous practice of households into the household responsibility system. Given the institutional resources and social capital available in the early stage of development of the market, household farming was the most efficient production method for Chinese agriculture. I will conduct a theoretical analysis comparing the different production methods, and discuss the role of household farming in the context of the Chinese economy in the 1980s.

According to simplistic neoclassical dichotomy, there are two ways to organize production: the market and firm. For agriculture, the household seems to be the third way featuring a network cooperative structure. Household farming is an old tradition that can be traced back thousands of years. From a viewpoint of behavioral rationality, it must be adaptive to the nature of agricultural production. Hence, household farming is supposed to outperform other forms of production methods in most cases. I will show the advantages of household farming by comparing it with contractual farming (more a hypothetical approach, not often practiced) and corporate farming.

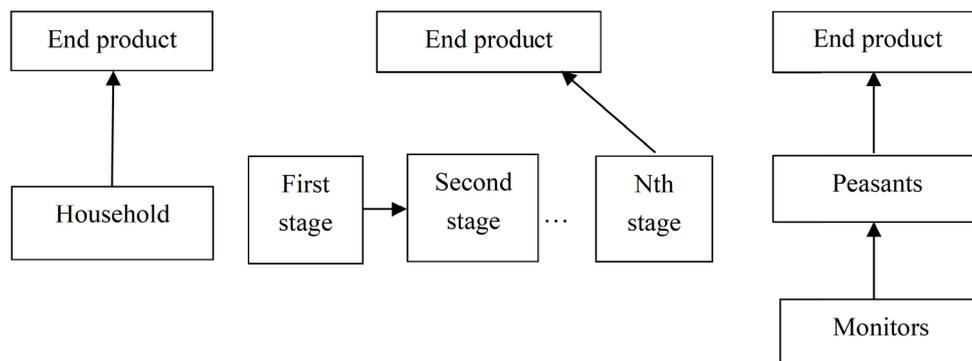


Figure 5.4 Household farming, contractual farming and corporate farming

Figure 5.4 illustrates three different ways to organize agricultural production. The first row presents household farming. Household farming is a decentralized and segregated form of agricultural production, and also the most popular one in human history. Households are the basic production units. They produce and sell grains, vegetables, meats and other agricultural products, receiving income as a return for their labor and to the ownership of land, if they also own the land. If the land is owned by a landlord, the income is separated according to the land/labor productivity ratio. Collaboration between households is not necessary, except for the construction of irrigation systems, the building of roads, and other public projects, which used to be organized by the clan in China. So, this production system features a high degree of decentralization and involves low transaction costs.

The second column illustrates contractual farming. By the term “contractual farming,” I refer to the production method where production is broken into different stages and coordinated by a spectrum of contractual relationships. Breaking the production into different stages enables a high level of specialization. Moreover, the entire production process is coordinated through price signals. So the cost of management and monitoring (the visible hand) should be low.

However, contractual farming is not a practical production method. The specialization is based on the prerequisite that different stages of production are independent of each other. For example, a worker can assemble a smartphone without mastering the knowledge of CPU development. A worker focuses on a limited scope of products or services and that is enough. However, agriculture is different. Taking growing grains as an example, there is continuity between sowing and harvest. The continuity in information is very important for the peasants to take care of the grains. So, the household farming takes advantage of a spill-over effect of production chain integration and the benefit of the integration may outweigh that of the specialization, especially when the market is less developed.

Besides, the cost of specialization is high for agriculture. First, it is very difficult to

break agricultural production into different stages as it involves no intermediary products. In other words, agricultural production is not modular-based while industrial production is. Second, most farming tasks must be done in time sequence. This also raises the cost of specialization. Thus, promoting specialization in the agricultural sector is more difficult than in the industrial sector. So, contractual farming may not be efficient because of the low benefit and high cost.

The third one is corporate farming. A company owns a large area of land and employs peasants to work on it. We should clarify if it is beneficial to assemble thousands of peasants in a firm and make them work together. Corporate farming brings about two kinds of benefits: it can increase the degree of specialization and benefit from economies of scale. The price for that is the creation of an incentive to shirk. In the industrial sector, one can control the quality of intermediary products instead of monitoring individual employees. However, because agricultural production involves no intermediary products, it is not possible to avoid a shirking problem by controlling the quality of the intermediary products. Also, an hourly wage does not provide the workers with sufficient incentive to maximize their efforts.

In practice, there are two ways to solve the shirking problem (Alchian and Demsetz, 1972; Shapiro and Stiglitz, 1984; Akerlof and Yellen, 1986; Bazel, 1997; Williamson, 1985). The first one is monitoring. According to Alchian and Demsetz, the firm emerges to manage the cooperative teams and solve the shirking problem which may destroy the cooperation. Without the price of intermediary products, the question of how to measure the marginal productivity of individual peasant becomes a problem. Hence, the nature of the shirking problem is informational, and monitoring is a mechanism to collect the information. Although monitoring economizes the information cost, the cost of monitoring may outweigh the benefit of corporate farming. Corporate farming will be beneficial for a specific area of agriculture, such as hog production, only when the firm is big enough.

The second way to solve the shirking problem is to increase the cost of shirking. As Shapiro-Stiglitz shirking model shows, the firm can pay the peasants more than the average wage. So, if the peasants get the sack for their shirking behavior, their next job may not offer them an equally high wage. In that way, the incentive wage raises the cost of shirking. It also depends on the intensity of competition in the labor market. In practice, the combination of both strategies is preferred over a single one. It resembles a “carrot and stick” strategy.

In summary, compared to contractual farming, household farming maintains only a minimum degree of specialization and generates the benefits from the so-called “spill-over” effect of integration of production. Due to the special nature of agriculture, the cost of specialization is probably higher than the benefit it generates. In that regard, the market is not the best way to coordinate agricultural production. In that sense, household farming is superior to contractual farming. On the other hand,

compared to corporate farming, household farming solves the incentive problem in a more efficient way.

In most cultures, people are taught to be altruistic to their family members. Hence, the incentive to shirk is minimized if the scope of the cooperative team is limited to the household. As the other regarding behavior is embedded in the culture, there is no additional cost to be paid for solving the incentive problem. Household farming minimizes the monitoring cost, yet does not benefit from economies of scale. On the contrary, corporate farming generates the benefit from large-scale cooperation, yet it needs to afford to pay the cost of monitoring. Hence, it is possible that the big-sized firms coexist with numerous small households in specific areas of agriculture.

However, the coexistence of corporate and household farming is only possible when the size of a market is sufficiently large. Besides, the factor market must be liberalized to ensure free allocation of factors such as labor and land. The annoying point is that the Chinese market was neither big nor liberalized in the 1980s. As regards to the labor market, the household registration system caused isolation between the rural and urban populations and restricted the mobility of labor across regions. Therefore, it fragmented the labor market.

Moreover, the labor market was embedded in the relation-based culture. An impersonal labor market requires the common understanding of the modern business model, including the formal employment contract, the negotiation of wages, and the third-party enforcement of the contract. It was impossible to establish a labor market of that sort while the traditional culture persisted. Indeed, the informal culture impeded the development of the labor market. For the peasants, employment changed the personal relationship into a cold, contractual relationship, which means repeated interactions were broken into many independent one-shot interactions. As mentioned earlier, in a fully developed large-sized market, it is beneficial to switch from the relation-based culture to the impersonal market. However, if the market is less developed and “thin”, the best strategy for the peasants is to be loyal to the culture. Moreover, the institutional change involves a coordination problem. If the common belief among the population is not to be changed, it is not beneficial for an individual to be a “pagan”. In practice, the peasants would be accused of hiring their relatives or countrymen.³⁹

The conflict can also be understood from a contractual perspective. It is a choice between the implicit contract (personal relationship) and the explicit contract (employment contract). The explicit contract has a narrow and specific scope with detailed terms while the implicit contract is general and vague. The implicit contract cannot be replaced by the explicit one if the economic system is embedded in the networked environment. It was considered unfriendly to employ a peasant from

³⁹ In an interview, a peasant denied the suggestion of employing the farmers who were his relatives, although he could expand production in that way. He said that, if he did so, he would destroy his status in the village forever. He could ask his relatives to help by offering a gift but could not be the boss of his relatives.

outside the village without asking the relatives. In a relation-based system, the relatives had the privilege to share the excessive benefit and new opportunities. The same principle also applied to the land market.

So, on one hand, the household registration policy restricted geographic mobility and thus impeded the development of the labor market. On the other hand, the prevalence of the relation-based culture imposed a barrier to the dis-embedding of the labor market from the networked environment. Therefore, in the early stage of the economic reform, the labor market was not fully developed and could not support production methods other than household farming.

Similar to the labor market, the land market was also regulated and embedded in the social relation. The major problem was the collective land tenure system. It enabled the village authorities to redistribute the land among households, which was a big problem for the free exchange of land. Besides, land leasing and another form of land transfer were also embedded in the social relation, and the collective land tenure system reinforced the embedment. I will discuss it later with some sampling data.

Contrary to household farming, more complicated production methods such as corporate farming and contractual farming rely significantly on the efficient working of the land and labor markets. Yet, household farming requires only the culture as its foundation. As the culture had been already available, it was not very costly to re-introduce household farming system for the production order in the agricultural sector.

5.3 The Collective Land Tenure System

The communal system was abolished while the collective land tenure system was retained. It was retained because it was thought to be the foundation of the socialist economy. Collective land ownership differs from private ownership. However, they share some structures in common. In general, there are three basic elements of the ownership right: the use right, the right to transfer, and the income right.

First, under the collective land tenure system, the land use right is contracted to rural households. It seems that households have exclusive land use rights. However, the use of land must be aligned with the government policy. In particular, households are not allowed to use the farmland for purposes other than farming. Second, the right to transfer land is incomplete. The mutual agreement is insufficient to complete the land transfer. A land transfer contract is only effective when approved by the landowner, as here referring to the collective, and registered with the land authority. Yet, the land use right can also be transferred through social relation without getting the formal institution involved. Third, the income generated from the use of farmland goes to the households. This arrangement creates the incentive for rural households to maximize the efforts.

With respect to these three basic elements of property right, the collective land tenure system seems to be similar to a private one, though more or less regulated and distorted in some aspects. However, there is still a major difference. The regulatory authority realized the importance of ensuring long-term private control over land to maximize the production efficiency, so they enacted the law to extend the land leasing for another 30 years. Indeed, if the land leasing was eternal, there would be almost no difference between the collective land tenure system and the private one. However, in practice, the village needed to tie up the share of collective land ownership with the membership of the community to enforce the collective ownership. Therefore, the village authority was under pressure to redistribute the land among households if the population changed. The frequent redistribution destabilized the contractual relationship between the collectives and the households, thus undermining the incentive of peasants to invest in land cultivation. Moreover, the government was granted the right to expropriate the farmland. The abuse of the powers of expropriation aggravated the problem of incomplete ownership.

To minimize the negative impact of redistribution of farmland on a regular basis, households tended to conclude short-term land transfer contracts. Further, they also relied on the social relations and cultural norms to solve the issues in relation to land because it involved low costs in that kind of environment. As mentioned earlier, under a relation-based trading system, the contract can be enforced by the credible threats of terminating a long-term relationship, the reputation, and the collective punishment. As long as the common cultural belief has been formed, there is not much additional cost involved to solve a dispute. However, the lawsuit is a risk-dominant strategy. It is too costly for a contract of low value, and those who try to seek protection of the formal institution would also be discredited. So, the institutional transition is only possible when the market value of land rises and the common cultural belief disintegrates.

I draw on some empirical studies to show that the land market was embedded in the relation-based culture. In 2005, Renmin University and RDI conducted a sample survey in the rural areas of 17 provinces, covering 90% of China's rural population. The research team received 1962 questionnaires from 1773 villages. Their findings (Ye, Jiang and Feng, 2006; Ye et al, 2006; Zhu et al, 2006) reflected four features of the Chinese rural land market. First, the rural land market was not very active. The survey findings suggested that 67% of the peasants were never involved in land transfers. Among those who had experience of land leasing, 65% only transferred the use right of a part of the land they hold. As the research team estimated, only one-third of the peasants and 10% of total farmland was involved in the land circulation. About half the transfers were not commercial, but occurred between relatives or friends, taking the form of oral contracts and required no monetary payment. They were part of the "gift exchange system", not the modern market economy.

Second, the price of land use rights was affected by non-market factors. About 87.6% of farmland was transferred to relatives or acquaintances. According to the cultural norm, it is shameful for the peasants to require monetary compensation from relatives or acquaintances for the land transfer. Thus, about half the land transfer contracts contained no payment. However, the peasants did require payment when transferring land to strangers. The rent of land was affected by the “differential mode of association”. The peasants took the personal relationships into consideration while transferring the land use rights.

Third, the leasing time was not specified in the contract. 46% of the peasants who had leased farmland to others had open contracts, with 27% of them signing a one-year contract. Only 6% of the land transfer contracts specified a leasing period of over 10 years. The open contract was popular because, under the relation-based trading system, ex-post renegotiation was more efficient than ex-ante contract specification. As the land use right was not secure, the peasants preferred short-term contracts over long-term ones. Compared to the 2001 survey findings, the number of long-term contracts rose and the number of open contracts declined, although they still dominated.

Fourth, most (86%) of the land transfer contracts were oral. If a contract was not intended to be enforced by the legal system, it was not necessary for parties to have a contract in written form. Among the contracts in written form, 46% were formulated by both parties and 22% were formulated by third parties, among others, the lawyers. It was not necessary for the parties to buy the services from lawyers because the contracts were obviously meant for the eyes of the parties and countrymen. The language used to formulate the contract might be significantly different from that used in the formal legal document. The rhetoric has already divided the society into different classes.

As shown above, the empirical study suggested strongly that the land market was embedded in the relation-based culture. One major reason was that the land rights were more secure under the relation-based trading system than under the rule-based one. As mentioned, to enforce the collective land ownership, the local authorities redistributed the land among households when the population changed. In that kind of environment, open land transfer contracts were more efficient. Besides, the land transfer should be approved by the collectives and registered with the land authorities. It would also form an obstacle to the free exchange of land use rights. In practice, most of the land transfer contracts were executed without the approval of the collectives. As long as the personal relationship ensured the effectiveness of the land transfer contracts, it was more beneficial for the peasants to avoid the interference of the collectives. Embedding the land transfer in the networked environment minimized the negative impact of collective land ownership, as the collective land ownership was a part of a formal institution.

There were two forces dis-embedding the land market from the relation-based culture. One was the change in the institutional environment. Realizing that insecure land rights affected economic performance negatively, the central government introduced a policy to protect the long-term contracts between collectives and households and prohibited the redistribution of land. Contracts would be preserved in written form and land certificates were issued to the households. The survey found out that the peasants holding the contract documents and land certificates tended to increase the investment in land cultivation, which shows the effectiveness of the policy. If the formal institution protected the land rights effectively, it would become beneficial for peasants to follow the formal rules. The other force is the rising value of land. As I have argued above, the money incentive could crowd out other incentives. If the land use right was priced high enough, the peasant might seek the institutionalized protection over the land transfer contract to ensure the maximization of benefit. A comparison between the land markets in 2005 and 2008 shows the change.

In 2008, Renmin University and RDI conducted another survey using the same method and in the same areas (Ye et al, 2010). They found that the size of the land market, measured in term of households which had ever involved in the land transfer, remained unchanged compared to 2005. The oral contract, the open contract, and the transfer between relatives were still popular. For example, about 80% of the transfers were not registered by, and without the consent of the collectives.

The survey in 2008 also suggested some changes. Among others, the share of “gift-style” land transfer fell sharply from 50.9% in 2005 to 38.6% in 2008. It suggested that the value of land increased so much that the peasants were incentivized to impose the formal institution to ensure the land transfer. In fact, the average price of a Chinese acre of land was 248 Yuan per year in 2008, much higher than 133 Yuan in 2005. Moreover, the number of the long-term contracts which cover a period of more than 10 years increased. However, the impact of personal relationships on land transfers should not be underestimated. After all, as long as the expectation was formed and the social network established, it was quite natural and convenient to rely on the personal relationships. Yet the shift to the formal institution involved a painful learning process.

5.4 The Success of the Household Responsibility System

As we may deduce, the introduction of the household responsibility system helped to improve the production efficiency in the rural sector. However, was it the only factor explaining the rapid growth of the rural sector? Lin (1991) named several possible reasons, among others, technological improvement (including the adoption of hybrid rice), massive use of fertilizer, and increasing state procurement prices. He came to the similar conclusion as Wen and Macmillan that institutional change played the most relevant role in achieving the quick growth.

Carter and Zhang (1994) suggested that during 1978-1989, Eastern Europe, although not carrying out as deep a privatization reform as China, also improved agricultural production efficiency to a degree comparable to that achieved by China. Thus, they argued that China's attempt to replace collective farming with household farming did not contribute a lot to the improvement of efficiency in the agricultural sector. According to them, the reason for the strong growth during the 1980s was the expanded supply of factors. However, Csaki (1992) indicated that there are three waves of reform in central Eastern Europe. The first wave of reform occurred shortly after the collectivization of the agricultural sector. The recession that accompanied the collectivization movement induced a policy reversal to decentralization. However, the policy was more explored than implemented. The second wave of reform occurred in the second half of the 1970s. The output of the agricultural sector could not meet consumer demand. Under the pressure of the shortage of crops, the policy explored in the first wave of reform was implemented, albeit partially. The third wave of reform took place during 1985-1989. Csaki summarized the central objectives of reforms as follows:

- Improve efficiency and quality over mere quantitative production increases;
- Move towards a price policy that reflected real production costs;
- Increase the role of financial incentives;
- Augment firm's decision making autonomy;
- Widen the possibilities for private agricultural production.

I will check these five policies with China's similar strategies. The first deals with the shirking problem arising from the difficulty in monitoring the efforts, which I have already discussed in the part on the "work points system". The second can be compared with China's increasing of the state procurement price, which was also one of the reasons to explain the agricultural growth. The third has yet to be discussed because Chinese peasants have limited access to financial institutions. I will discuss it in the chapter on the financial sector. The fourth is to break communes into teams and further into households. The last policy is to transform the collective ownership system into a quasi-private one. So, the policies implemented in Central Eastern Europe were by nature not very different from China's policies explored and implemented at the same time. They both had to solve the problem arising from distorted information and the incentive structure underlying the collective production system. They solved it in the same way. So, the conclusion that the privatization reform played no relevant role in restoring the efficiency of the agriculture is not very persuasive.

Carter and Zhang claimed that the prevalence of many cooperatives after the reform is evidence for the non-importance of institutional reform. Collectivization was not the reason for the economic tragedy. But as Lin argued, collective farming could be efficient if the right to exit from the commune is granted. As a result, the one-shot game is transformed to be a repeated game. In that sense, the cooperative equilibrium

is sustainable for collective farming and the collective system has the advantage in coordinating large projects involving high fixed costs. Then it could survive the competition with the household farming system. In China, there are also towns and villages insisting on the collective economic system. Some of them were successful with regard to the rural industrialization.

Some scholars were positioned in between. They acknowledged the importance of institutional reform but did not think that it was fundamental to the rapid growth of agriculture. Huang and Rozelle (1996) indicated technology adoption as the most important determinant of rice yield growth using data from China's 13 rice-growing provinces.

During 1978-1984, technology adoption and institutional change accounted for 40 percent and 30 percent of the growth respectively. During 1985-1990, technology adoption accounted for all the growth in rice yield. Their argument is open to criticism. The most controversial part of their argument was to consider the institutional reform as working at the same level as the adoption of technology. Lin (1991) made an inquiry to see the impact of institutional change on technology adoption. He studied the adoption of hybrid rice under the collective and household farming systems, testing the hypothesis against the time-series cross-county data on hybrid rice diffusion in Hunan province during 1976-1986. He came to the conclusion that during the collectivist period, the adoption behavior was not consistent with the institutional background due to the political pressure on the diffusion of hybrid rice. For the household farming system, the adoption behavior was consistent with the prediction of the model. The diffusion of hybrid rice was beneficial when it was a result of the economic calculation under the household farming system, rather than the political pressure under the collective farming system. China's practice showed that the adoption of hybrid rice will be beneficial if the land-labor ratio is low (Janaiah and Hossain, 2003).

Although the institutional change was not the only source for the growth, it was a prerequisite. The role of institutional change was not equal to that of technological improvement, massive use of fertilizer or development of hybrid rice. It introduced a new way to organize and coordinate production. It provided farmers with incentives and facilitated the use of information. Under the new rules of the game, farmers had the incentive to use advanced technologies, fertilizers, and any other means that could improve the production efficiency. So, the implication for development policy is that the institutional factor is more important than the technological factor. The technology can only be integrated into the production system when the institution encourages it.

5.5 Summary and Implications for Further Studies

During the 1950s, the Chinese government engaged to replace the household farming system with the collective farming system. In a short time, it was developed into an

irrational “communal dining system”. The demand-based distribution scheme was introduced to replace the contribution-based scheme, which unexpectedly created a lot of motivation for the peasants to shirk. Ironically, the enthusiasm towards the ideal commune evolved into a monstrous social wave carrying the Chinese economy into a desperate crisis. During the “Great Leap Forward” period, a terrible famine killed millions of people. To alleviate the crisis, a compromise was made.

First, the commune was broken into production brigades and further into production teams. The slimming down of the production unit improved the efficiency of decision making and thus productivity as well. Second, a scheme of work points was introduced to provide farmers with incentives. It was a strategy to corporatize the agricultural sector. However, due to the continuity nature of agricultural production, the inaccurate measurement of the contribution of individual farmers could not create sufficient incentives.

After the Cultural Revolution, the central authority relaxed its ideological control and institutionalized the spontaneous practice of household farming. The household farming system economized the information cost, thus taking the advantage over corporate and contractual farming, especially in the early stage of the reform where the network size was small and the factor market not liberalized. So, the shift to the household farming was fairly rational for the Chinese rural sector.

The introduction of the household responsibility system did not merely improve the productivity in the rural sector. It had several consequences affecting the further reform. First, the household responsibility system was supposed to be responsible for land fragmentation, which imposed an obstacle to the mechanization of agricultural production. However, the low ratio of land to labor should be ascribed to the underdeveloped economy and its odd structure. As the industrialization proceeded, the transfer of labor from rural sector to industrial sector solved the problem.

Second, controversy persisted over the collective land tenure system. According to the neoclassical theory, the collective land tenure system should be further reformed into a quasi-private, if not a genuine private system, so as to maximize the value of land. However, the opponents (Polanyi, 1944; He, 2010) argued that land cannot be considered merely a production factor but a means of social insurance. If the migrant workers cannot settle in the urban area, they can always go back to the villages and work on the responsible farmland. The argument of that sort is not quite pervasive. The perfect rationality implies that individuals always make the right decisions and so they should be granted the freedom to choose. However, in practice, processing information requires knowledge and efforts. A farmer may not be as far-sighted as the theory expects, not that far compared to homo economicus. Hence, in the early stage of the reform, it might be better to enforce the collective land ownership by associating it with the membership of a community. In fact, the economic model oversimplifies the practice. Under certain circumstances, liberalizing land market is

beneficial. But when and how can we carry out the further reform to liberalize the land market in total? It is a question that deserves a deep and wide study.

Third, the introduction of the household responsibility system affected the coordination and mobilization ability of the rural communities. As aforementioned, the local authorities in areas where the control of the CPC was established late demonstrated enthusiasm towards the implementation of the national policy. In doing so, they gave the signal of their loyalty to the leadership. So, the peasants in those areas suffered more because of the strict implementation of the irrational policy. The culture was not integrated into the formal institution, but disintegrated into distrust. Hence, when the economic crisis came, the peasants in those areas were the first to choose to return to household farming. Lacking trust against public administration, they decided to distribute the collectively-owned resources to individual households and rely totally on themselves. It was generally fine when it only came to the agricultural production. However, the local authorities also lost the ability to mobilize the resources and coordinate the public projects. Conversely, some other collectives where the trust persisted went the way of rural industrialization, which fueled China's growth enormously.

In sum, the household responsibility system serves as first step of the great transformation. It is an institution of household farming in nature and is not new if we compare it with the traditional Chinese farming system. What interests us is how Chinese peasants decide to deviate from the collective farming system and go back to the household farming. Moreover, their interaction with local and central authorities results in an innovative form of household farming with the collective land right unchanged. It creates a dual-system to make the land right stable at the lower level on the one hand and make households the central production unit on the other. Hence, this system provides both insurance and incentive to the peasants.

6. Rural Industrialization and TVEs in China

Only the recovery of the agricultural sector could not ensure the high speed of economic growth. As shown by the experience of advanced economies, industrialization is the only option for creating an economic superpower. For China at that time, the state-owned sector, which had advantages as well as privileges in the economic hierarchical system, was supposed to perform this task. However, due to a lack of incentives the performance of the state-owned sector was only average.⁴⁰ Compared to the limited contribution of the state-owned sector, rural industrialization succeeded and played a relevant role in transforming the Chinese economy from a fully planned to a mixed economy.

Rural industrialization is considered an option for developing countries to accelerate the process of industrialization. It has several advantages for the local economy. First, it utilizes idle or underemployed labor in the agricultural sector, improving the efficiency of agricultural production and the average income for the peasants employed in the non-farm and farm sectors. Second, it turns peasants into industrial workers. Workers require not only the skills, but the understanding of massive collaboration. Rural industrial firms offer opportunities for training peasants. Third, rural industrial firms are supposed to perform a supporting role in agricultural production. Some of them are established with the aim to produce fertilizer, machinery and equipment necessary for agricultural production. Due to these advantages, rural industrialization was popular in Asia. India, Indonesia, Pakistan, and Taiwan were engaged in the development of the rural industry. Some of them succeeded and others failed. In rural Indonesia, the clustered microenterprises performed a seedbed function for industrial development (Weijland, 1999). In Taiwan, the industry grew up in rural areas and extended households thrived. (Lavelly, 1990). Contrary to the success in Indonesia and Taiwan, due to some institutional barriers, the output and employment of rural industrial sector was rather stagnant in India (Mukherjee and Zhang, 2007). At any rate, they could not be compared with the rural industrialization in China with regard to scope and scale and the overall impact on the economy. Further, China's practice was complicated by the fact that its rural industrialization occurred in a transitional economy. We may ask how could industrialization be initiated and succeeded in the rural areas lacking institutional resources as well as physical capital. This question raises a challenge to the existing economic theory.

The experience of China's rural industrialization was unique as it was a spontaneous strategy not intended from the top down, and was carried out exclusively by the township and village enterprises (TVEs). The rise of TVEs was the most astonishing and unexpected event during China's economic transition. Three questions are to be addressed. First, the emergence of TVEs was not anticipated. The rural

⁴⁰ See Harvie, Charles, China's township and village enterprises and their evolving business alliances and organizational change, Working Paper 99-6, Department of Economics, University of Wollongong, 1999

industrialization was a coordination problem in nature and it was perfectly solved. Second, the persistence of common property institutions needs explanation because they were not supposed to be incentive-compatible. In reality, they survived and prospered. Third, besides survival, TVEs adapted to the transitional economy and contributed significantly to industrialization and economic growth - a success worthy of more attention.

6.1 What are TVEs?

Before any further analysis, we should first examine the nature of TVEs. The literal meaning of a TVE depicts its geographical feature. A TVE should be located in a town or village. Further, we can find this term in the official document enacted in 1996, called the *Codes on TVEs*. In it, TVEs refer to enterprises collectively owned or invested by peasants performing a supporting role in agricultural production. Towns, villages, or individual peasants should either own more than 50% of a TVE or be able to control and manage it. With respect to operation sites, TVEs can be divided into two categories, the township enterprise and the village enterprise, which may differ in some aspects. It is assumed that the association of village enterprises with the local authority is not as tight as that of township enterprises because the village committee is not a government body.

Hence, according to the general understanding, TVEs were distinctive by its operation sites as well as the ownership structure. First, TVEs were supposed to operate in rural areas, with most employees being peasants. As the TVEs grew, some might establish a presence in urban areas, such as sales departments. However, they were still identified as TVEs as they were headquartered in the rural areas and controlled by the rural community or households.

The second character of the TVEs is associated with its ownership structure. Under the impact of market reform and governmental policy, the organizational form of TVEs was highly diversified. During the early stage of rural industrialization, most TVEs were collective properties. However, as the economy continued to grow, a tendency towards privatization appeared. First, more rural households quit farming and opened up private establishments. The proportion of household-run and multi-household-run establishments in TVEs increased continuously. Second, "red cap" TVEs emerged. Individuals invested in and controlled these TVEs, but the TVEs were registered as collectively owned enterprises. The "red cap" provided political safety and additional access to resources, but also invited government intervention. Therefore, a more sophisticated strategy was used to avoid punishment by the government. A hybrid form of ownership was invented to create a balance between public and individual interests, called the corporate cooperative. By the end of the 1990s, as a combined result of market development and a radical turn of governmental policy, the majority of the collectively owned TVEs were privatized.

There were three types of TVE ownership. The first one is collective ownership. Some economists considered the TVE a vaguely defined cooperative because of its collective nature. Although nominal ownership was assigned to the entire members of a village or town, the TVE employees were authorized to use resources according to the specified rules, sharing something in common with private ownership. However, as “shareholders” of the TVE, members were deprived of the right to transfer their “shares” to others. Also, their claim to the income was not complete because they did not know the exact amount of shares held. Actually, the principle of egalitarianism was applied to income distribution without or with limited attention to the individual contribution. Members must stay in the community to possess a share of the ownership, which was withdrawn once they leave the community. In short, the collective ownership was attached to the membership of collectivity. In that sense, the ownership of TVEs was not clearly defined. However, this may provide some advantages for an emerging market.

The second type of TVE ownership is hybrid ownership. In the Wenzhou area, a special form of TVEs emerged. I call it the “corporate cooperative”. The community was entitled to a specific number of shares, with the remaining shares distributed among the individual peasants according to their contribution to the investment. I call it “corporate” because of the acknowledgement of the private holding of ownership shares. Apart from the capital structure, labor supply was restricted as well, and only those who contributed to the investment were allowed to have a job. Although similar to collective TVEs because of its cooperative nature, economic incentive was provided through the private holding of ownership shares.

The third type of TVE ownership is private ownership. At first, private ownership had no advantage over collective ownership. On the contrary, even private enterprises competed for a “red cap” to avoid possible political interference. They paid fees to the local authority in exchange for the “red cap”. However, they were not discriminated as “true” collective TVEs needed to pay the fees as well. In 1984, the central authority issued two documents acknowledging the legitimacy of the household-run and multi-household-run establishments. In a short time, the household-run establishments accounted for the majority of TVEs. Other organizational forms such as companies with limited liability and corporations also emerged in the TVE sector and played an increasingly important role.

The coexistence of various ownership structures reveals the origin of the debate on the nature of TVEs. Some scholars have argued that the success of TVEs invites further discussion because they were vaguely defined cooperatives. Others thought that TVEs were quasi-private enterprises and the rapid growth of the Chinese economy could be easily explained by the existing theory. Before I join the debate, I will introduce the short history of TVEs and highlight the economic achievement of the TVE sector.

6.2 Development Pattern and Economic Performance of TVEs

Shortly after the start of the economic reform, communal enterprises were transformed into TVEs. Prior to the reform, the people's commune was the only unit to organize production and distribute income. As we know, China's industrial policy was to promote the industrial sector in urban areas. To accomplish that goal, the state transferred resources from the agricultural to the industrial sector. As a result, the peasants had no access to the manufactured products, including intermediary and consumer goods. It is natural that the commune attempted to have its own factory, which could provide diversified products and create jobs for idle labor. However, communal enterprises were regulated under a strict policy. They were only allowed to operate locally, use local resources, produce locally and sell the products in the local market. Wu (2010) indicated that communal enterprises were part of the "natural traditional sector", not part of the "modern industrial sector".

The end of the Cultural Revolution results in the re-birth of communal enterprises. With the abolishment of the people's commune, communal enterprises were transformed to be TVEs. Besides just a change in name, the most important change was that TVEs operated in a market-based environment, unlike the communal enterprises in a centrally planned economy. The potential of TVEs was tremendous. The figures below demonstrate the success of TVEs.

Year	Value added of TVEs (hundred million RMB)	Value added of TVE/GDP (%)	Export of TVEs (hundred million RMB)	Export of TVEs/national export (%)	Employee of TVEs (ten thousand person)	Employees of TVEs/Employees nationwide (%)
1978	208.30	5.7	-	-	2827	7.1
1980	263.92	6.3	-	-	3000	7.2
1985	602.88	8.6	-	-	6979	14.0
1990	1205.58	13.5	233.8	16.3	9262	14.3
1995	4093.97	24.9	1513.18	45.3	12861	18.9
2000	7662.53	30.4	2502.65	42.9	12820	17.8
2002	9333.14	31.6	3332.39	42.9	13288	17.9

Table 6.1 Value added, export and employees of TVEs⁴¹

From the above table, we find that at the beginning of the reform, the value added of TVEs was only 5.7% of total GDP. Then, the reform took place and the value added of TVEs doubled during the first 5 years of the 1980s, and doubled again in the next 5 years. 1990 marked another turning point, with the growth rate of TVEs faster than that of GDP. The value added of TVEs tripled during 1990-1995 and accounted for

⁴¹Yu, Li, Chunhai Jiang and Shu Li, *Zhongguo Xiangzhen Qiye de Guoqu, Xianzai he Weilai (TVEs' Past, Present and Future), The development perspective*, volume 8, 2004. The data is collected from Chinese statistical yearbook and yearbook of statistics on Chinese TVEs. All the monetary data is adjusted based on the consumer price index of 1978 to minimize the impact of inflation and deflation.

nearly 25% of GDP. The export of TVEs grew at an unprecedented rate during that time. In 1995, TVEs contributed nearly 50% to the total value of exports. They employed 120-130 million workers, accounting for 18% of total employed labor. Comparing 18% to 30%, the contribution of TVEs to GDP, we find that the productivity of the rural industrial sector was above average.

In 1985, the economic reform achieved remarkable progress. More economic organizations were established and market transactions were more active. The number of TVEs increased to 12.2 million in 1985. During that time, TVEs prospered. 1990s was a golden age for TVEs. About 20 million TVEs were active in the market and contributed enormously to overall economic growth. Although the development pace of TVEs has slowed down in the last 10 years, their contribution to GDP amounted to 24.3% for the year of 2011.⁴² These figures suggest that TVEs created a powerful non-state sector, served as a major engine of fast economic growth, and thus were the backbone of the Chinese economy.

Apart from the economic achievements of the TVE sector, the figures associated with change of ownership structure of TVEs are of interest as well. The number of collective TVEs stayed constant during the 1980s and the first half of the 1990s. In 1978, there were about 1.52 million collective TVEs while in 1996 the figure was 1.55 million. After 1996, an intended privatization was initiated against the collective TVEs and their numbers fell, to 1.29 million and 1.07 million in 1997 and 1998 respectively. In the new millennium, the advantages of collective ownership disappeared due to the quick development of the market system. As a result, few TVEs remained collectively owned. The number of collective TVEs fell from 0.4 million in 2003 to 0.1 million in 2010, after being flooded by the private sector. Their contribution to the total value added of TVE sector also fell from 10% in 2003 to 5% in 2006 and further to 2% in 2010. The situation of corporate cooperatives is even worse. "TVE" is now a dead word given the irrelevance of collective TVEs.

With respect to the private TVEs, the TVE statistical yearbook calls them TVEs at village level before 1997. In 1986, there were 13.63 million of such TVEs compared with 1.52 million collective TVEs. Unlike collective TVEs, their number increased to 20.41 million in 1995. In 1997, the term "private TVEs" was used in the yearbook to replace the vague term "TVEs at village level". Afterwards, it was divided further into different categories such as private enterprises, household-run establishments, companies with limited liability, corporations and foreign-invested firms.⁴³

Though large in number, private TVEs were not as competitive as collective TVEs. Before the carrying out of the privatization policy, the contribution of collective TVEs to the total value added of the TVE sector was much higher than that of private TVEs. The establishment of the TVE sector and to some degree the establishment of the

⁴²The value-added of TVE sector is not available in the TVE statistical yearbook of 2012. Based on the statistics of the previous years, the ratio of value-added to the value of output is about 25%. So I use 25% to do the estimation.

⁴³ All the figures are to be found in the TVE statistical yearbooks 1978-2012.

entire private sector owed much to the sudden rise of collective TVEs. Considering the role of collective TVEs in the economic transition, I will devote the major part of this chapter to the analysis of collective TVEs.

The following graphic is from Fan and Chen (2005), which offers a landscape of the ownership structure of TVEs.

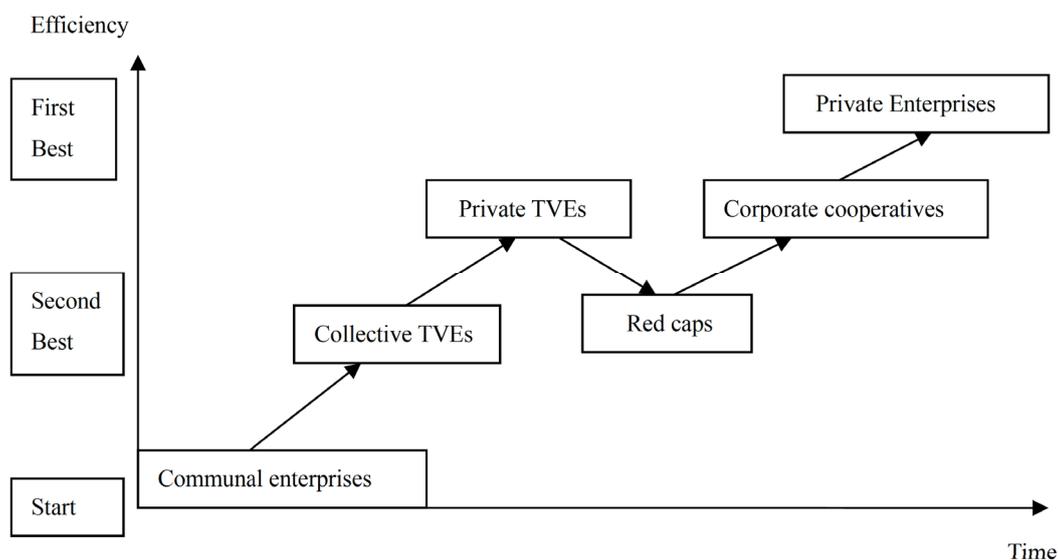


Figure 6.1 The development pattern and ownership structure of TVEs

Figure 6.1 is easy to read. However, Fan and Chen made several mistakes that deserve to be discussed. The first mistake they made was that private TVEs were not born from the privatization of the non-private sector. As shown by the statistics, individual household created and managed the majority of private TVEs. In fact, collective TVEs coexisted private TVEs, household-run establishments and corporate cooperatives. Only the red caps were virtually restructured to be corporate cooperatives as a combined result of government policy and local institutional innovation. Moreover, during the early stage of reform, collective TVEs turned out to be more efficient compared with small-sized private TVEs and household-run establishments. Therefore, ranking private TVEs above collective TVEs is not reasonable without referring to the institutional environment they faced. Fan and Chen agree that the collective ownership system was adaptive to the then-existing institutional environment. Yet, the growth of the TVE sector drove a shift in policy from anti-privatization to pro-privatization. The shift in policy resulted in the restructuring of collective TVEs.

6.3 Some Existing Explanations of the Rise of TVEs

Regarding the role of TVEs in China's transitional economy, scholars proposed different hypotheses to explain the rise and success of TVEs. The first and simplest explanation is that communal enterprises laid foundation for the growth of TVEs. It

was not wrong for the assets and capitals of communal enterprises to be fully transferred to TVEs. However, the form and the purpose of these two organizations were very different. Communal enterprises were established to solve the problem of shortage and improve the competitiveness of individual communes. TVEs were established for economic purposes - to create jobs and promote local growth. With respect to the purpose of organization and the constraints they faced, the two organizations are not the same.

As mentioned earlier, the key feature of TVEs is the “collective” ownership. Scholars differ in defining this type of ownership. Some (Peng, 1992; Sachs and Woo, 1997) argued that “informal private property right” is an appropriate term to describe the distinctive property right arrangement of TVEs. The informal privatization approach attempted to solve the paradox arising from the “progress without privatization”. Peng (1992) summarized that the informal private property right evolved from two institutional changes: profit sharing and managerial contracting. Through these two changes, TVE managers were granted large autonomy to manage the operation of enterprises. Moreover, profit sharing solved the incentive problem and limited government predation. Indeed, these institutional changes resulted in the separation of ownership and control for TVEs, which undermined the impact of a collective nature on the corporate governance. Sachs and Woo (1997) studied the cases in the Wenzhou area and concluded that most TVEs were actually “red caps”. “Red caps” were private enterprises that paid administration fees to grant political safety. Thus, the collective ownership was only a superficial camouflage for TVEs.

Some scholars have proposed more complicated hypotheses than the informal privatization approach. Nee (1992) employed a term called “hybrid organizational form” to describe the nature of TVEs. According to him, as long as there are political discrimination and market imperfection, the hybrid organizational form is superior to the pure private one. Li (1995) argued that “ambiguous property right” was necessary given the grayness and imperfection of markets. During the early stage of the transition, the state monopolized access to resources. The dual-track pricing system only permitted the market transaction of excessive products. Most products, assets and capital were controlled by the state through a central planning system. Hence, development of an informal relationship with the local government was an issue of survival for TVEs. Enmeshing the local government into a regional web helped to avoid any predatory government regulation and ensured access to resources. Smyth (1997) called it “new regionalism”. Tian (1996) proposed a similar hypothesis called “endogenous property right” to capture the nature of vaguely defined ownership. Che and Qian (1998a) propose a concept of “local government ownership” arguing that it was superior to private ownership and state ownership during the early stage of the transition. While expressed differently, they share the common understanding that the seemingly ill-defined institutional arrangement of TVEs was efficient given the imperfect market. Also, the market was gray and imperfect as long as the administrative authority was not limited by constitutional rules and the legal system

was not established to enforce the private property right externally.

As such, it is not surprising that scholars (Qian and Weingast, 1997; Oi, 1992, 1995, 1999; Walder, 1995) paid much attention to the role of the government in the socialist transformation. According to them, the decentralized character of the Chinese political system enabled a distinctive form of state-led growth, which Oi termed “local state corporatism”. Strong competition among regions emerged as a result of decentralization of administrative and economic authority into the locality. Hence, it was a better strategy for local governments to work with collective and eventually private enterprises than to prey on them. Facing increasing competition among regions, local governments and TVEs formed corporatist alliances and supported each other. To some degree, commercial competition resulted in institutional competition. The corporatist alliance was an institutional innovation intended to maximize the productive potential locally.

All these hypotheses focused mainly on the macro environment for TVEs. The micro-mechanism remains unexplored. For example, some scholars put high value on entrepreneurship (Xin, 2004; Wen, 2010). As reported in many case studies, cadre entrepreneurs contributed significantly to the growth of the TVE sector. In the social network perspective, they were important nodes, coordinating the information transmission and resource flows. As the CEO trusted by the shareholders, a cadre entrepreneur must be trusted by the community members and he or she must have the sensitive political antennae and be talented in doing business.

But, how could this cadre-centered network work so well? As mentioned, the rural industrialization was a coordination game in nature during its early stage. An interesting explanation developed by Pan (2005) is not included in the mainstream understanding of the rise of TVEs. He argued that the socialist nature of the rural collective organization was key to the expansion of the rural industrial sector. According to him, the household responsibility system had a negative impact on rural industrialization for the collective resources were totally distributed among households. But industrialization required significant investment and it was hard to coordinate individual households to invest in such projects. If the community could retain the collective ownership of resources, the decision to invest would be centralized and thus involve lower transaction costs. In that regard, the cadre-centered network, which Pan calls the legacy of socialist tradition, provides an institutional foundation for the development of TVEs. It produced the common belief among residents, which evolved to be an informal institution coordinating the collective actions. In short, informal institution and social ties, combined with existing organizational resources, shaped an environment well suited for industrialization.

There is one more question. If the socialist tradition could sustain the cooperation among community members, why did the people’s commune fail? Taking form of the cadre-centered network, what Pan terms socialist tradition actually combines Party

discipline with traditional culture. The cadres are from Party while the network arises out of culture. Some cultural norms promoted the network-based cooperation. Weitzman and Xu (1994) proposed a hypothesis introducing a new factor that they termed “trust” to explain the success of TVEs. Chinese society, as they said, was characterized by a high degree of cooperation compared to a low degree of cooperation in Western societies. They tried to draw attention to the function of culture in promoting economic growth. However, their argument lacked a detailed analysis of what “trust” was and where it came from. Zhou (2005) viewed the process from a sociological perspective. According to him, in Chinese society the property right was protected by the stable relationship between the economic organization and the surrounding environment including the government. Social relation and informal institution maintained a specific form of ownership and control over resources. Instead of using the term “ambiguous property right”, he developed a new term called “relational property right” to capture the nature of China’s informal property right system. His viewpoint is fresh, new, and inspiring. Zheng, Chen and Ruan (2011) argued that the growth of the TVE sector made “village-corporations” into “corporate villages”.⁴⁴ In the case study of Yonglian village, they found that TVEs has increasing influence in the local affairs. And the local governments tended to cooperate with TVEs.

As shown above, existing literature tries to understand the rise of TVEs in terms of the property right system. Only a small number of scholars saw no difference between TVEs and private enterprises. They ignored the transformation of the ownership structure of TVEs. The rest acknowledged the collective nature of TVEs, tried to find out, and proposed factors that made collective TVEs into well-performing economic organizations. However, based on what they have done, we can still deepen our understanding of TVEs by focusing on the interaction between TVEs and the market, which the existing literature pays less attention to.

6.4 Explaining the Rise of TVEs

Economists used to focus on two kinds of institution solving the problem of resource allocation, market and central planning. However, the success of collective TVEs can neither be explained by the theory of the market economy or by that of the command economy. The theory of community governance provides a strong analytical tool. Ostrom (1990) studied a number of cases involving community governance and found that the community could solve the coordination problem without introducing private property rights. Many scholars supported her findings and emphasized the role of social capital and community governance in the economic system. However, the theory of community governance invites challenges while facing the case of TVEs. There were certainly cases indicating the efficiency of community governance under certain circumstances. Yet, the massive emergence of collectively owned enterprises

⁴⁴ “Village-corporation” refers to that government run the village like a corporation while “corporate village” means that the corporation takes control over village. The line between TVE and village is melting.

during a short time had no precedent. In what follows I attempt to understand the rise and success of TVEs from an institutional perspective. First, I will explain the circumstances a rural community could, and would choose the strategy of rural industrialization. Second, I will turn to the question of how TVEs, as vaguely defined cooperatives, solved the incentive problem so that they would not collapse from inside. Third, I will explain why TVEs performed better than private enterprises during the early stage of transition and then declined.

The rise of TVEs and the role of collectivist culture

We can only understand the rise of TVEs in the historical context. Pan presented an analytical framework to explain the diversified development strategies across regions. As he asserted, during the early stage of the reform Chinese rural communities faced two choices, to implement the strategy of household farming or to launch rural industrialization. The household responsibility system was by nature a privatization strategy. It distributed the usage rights of land and assets to individual households. By contrast, retaining collective ownership over land and capital would be necessary for industrialization because industrialization required a significant amount of investment, which individual households could not afford.

In short, the strategy of industrialization involved high risk and high profits compared to low risk and low profits for the strategy of household farming. Although there is a tradeoff between the two strategies, the latter is risk-dominant. Thus, the implementation of an industrialization strategy required a coordinating mechanism, which Pan termed “socialist tradition”.⁴⁵ Socialist tradition has two dimensions, an organizational and a psychological dimension. First, with respect to the organizational dimension, organizational resources were available during the early stage of transition. The former socialist institutions were not abolished, but preserved to facilitate the market transactions once the major mission of the state changed from revolution to economic growth. Second, even after the liberalization of the market, collectivism still exerted enormous influence on market participants. Collectivism is not an unreasonable belief, but a culture evolved from the interactions among members in the same group with an emphasis on the significance of groups, and requires that the individual should serve the group interest.. The socialist movement did not result in cultural disintegration, which was actually intended, but made the collectivist culture a component of Chinese-style socialism.

Hence, in a village where socialist tradition was preserved and the local authority had high prestige among peasants, coordinating the rural industrialization involved less difficulty and low risk. However, without the collectivism maintaining collaboration among peasants, they would choose to distribute the collectively owned land and capital. There was still a problem. In a people’s commune, political power maintained the high status of cadres and other socialist norms. The type of relationship between

⁴⁵Oi call it Maoist legacy. Both terms share something in common.

cadres and peasants was what Oi defined as a “patron-client” relationship. Cadres had the authority to allocate resources and peasants could only accept what the cadres had decided. Peasants could only stay compliant to their patrons’ wishes and probably be rewarded for it. It was a top-down relationship showing the asymmetry in the political power. However, after the reform the socialist tradition could no longer be preserved by the political power but by economic performance.

After the collapse of the communal system, the household responsibility system emerged as an alternative to the peasants. If the peasants were not satisfied with the performance of local authorities, they undermined the relationship with the town and village by partitioning the collective property. The legitimacy of governance was no longer generated from the coercive power from the top down, but from the consensus of peasants from the bottom up. Thus, the “patron-client” relationship became a “principal-agent” relationship. The right to exit was given to peasants so that their bargaining power increased. Although household farming was a risk-dominant strategy that threatened the collaboration necessary for rural industrialization, it provided a filtering mechanism to amplify the impact of collectivist culture. In fact, the household responsibility system did not only decentralize the control over land and other resources, but also destroyed the socialist tradition by decreasing the significance of groups. In doing so, it tested all the rural communities for cohesiveness. The level of cohesiveness is positively associated with the impact of collectivist culture.

I will discuss a representative case reported by Pan (2003) in his doctoral thesis. Zhaojiabao village was known for its mania towards collectivization movement. The villagers worked hard, but earned little. To solve the poverty problem, the party committee decided to set up several factories to create an additional source of income. By the end of 1978, the annual revenue made by the communal enterprise was 80 thousand Yuan, which was a lot of money at that time. Therefore, in 1980, when household farming became popular again, the community managed to preserve the collective ownership over the means of production. The “socialist tradition” was strong because of the large amount of common property. Community leaders were able to coordinate the expectation of individual peasants by showing the ability to manage business operations. However, market risk could not be avoided. The leaders made the wrong decision to open a paper-producing factory, polluting the water in the irrigation system, which drew the attention of the environment agency. Paper quality was also low and the products could not find any consumers. The bankruptcy of the paper factory gave rise to a panic and caused distrust among peasants. As a response to the trust crisis, the party committee held an urgent meeting with the entire village and committed to recover the loss. Afterwards, they began to produce radiators and the increasing sales revenue proved that their choice was right.

In 1984, the upper level of the government urged the village committee to distribute land to the peasants. Some peasants supported the shift to household farming and

suggested that the assets of the radiator factory be distributed to individual households. On the other side, the relatives of the leaders tried to persuade them to appropriate the residual income. However, the community leaders insisted on community governance, stating that the household farming was not wealth generating and privatization could result in the unjust distribution of income. Only the collective ownership ensured an inclusive growth. Most villagers ultimately supported their decision.

The emerging choice of household farming had dual impacts on the collective economy. It corroded the unhealthy part, but strengthened the healthy part of the collective economy. As illustrated, both the government and peasants wanted the partition of property. The aim of the government was to increase the amount of grain yield. They had not yet imaged the success of rural industrialization. If the discount rate is high to peasants, the return to household farming might be estimated as higher than the return to industrial production. Peasants with high impatience to consume would vote against community governance of TVEs and thus shift the coordinated equilibrium.⁴⁶ To solve the problem, two kinds of incentives were generated under the socialist tradition. They were the monetary and moral incentives. The monetary incentive refers to the expectation of increasing welfare for individual households. Peasants anticipated that a well-performing TVE generated higher income than the average income in the farming sector and thus expected a share of the welfare improvement that TVEs had promised. In the case of Zhaojiabao village, once the performance of TVEs was not as good as expected, suspicion arose among peasants. When they made big revenues, the community leaders regained prestige.

As shown above, the monetary incentive acted against the division of property and shifting of resources to household farming. However, as the total value of TVE increased, the incentive to appropriate the wealth would be stronger, particularly for those who manage the business operation. Therefore, the moral incentive was introduced to resist privatization. It concerned the distribution of income, an issue of equality and justice. While facing increasing profits, the TVE leaders were supposed to resist the temptation of wealth and not to benefit themselves by improper appropriation. If they did so, the community would fall apart. The leader of Zhaojiabao village said that 2300 villagers must share the profit of TVEs and rejected the proposal to appropriate a large share of profits through managerial contracting. In Huaxi village, the salary of TVE leaders was lower than that of workers.⁴⁷ In the extreme case, the regulations specified the principle of equality and outlined that the maximum wage of managers was not allowed to be twice high as the wage of workers. In that regard, both the monetary and moral incentives drove able men. Judging by collectivist culture, virtues such as selflessness, sacrifice, honesty, and loyalty were highly appreciated. Hence, the moral character of the TVE leaders was very important in sustaining the cooperation in the system and making themselves respected. Some

⁴⁶And if the community fell apart, the re-establishment of common property institution was difficult and costly, if not impossible. I will come to it in later part.

⁴⁷The salary of engineers is higher than that of normal workers because otherwise the engineers would change the employer. Outside the village is a free market. This is an important point to understand the downfall of TVEs.

scholars have called these TVE leaders “Confucian entrepreneurs”. This special title contains a consideration of the moral dimension of entrepreneurship in the TVE sector.

I also wish to mention that both TVE leaders and villagers abided by the moral norm. The moral norm was a defined set of rules that regulated the behavior of peasants. They were supposed to contribute to the common welfare and include the improvement of common welfare into their utility function. For example, the majority of TVEs’ profits was re-invested for capital expansion, resulting in no bonus for the peasants for a long period. Moreover, under certain circumstances the wage rate would be lower than the marginal return to labor. The low wage rate could be considered an investment made by individual peasants to the TVE with expectation of higher returns in the future. The strong preference of investment over consumption shows that morality decreased the discount rate and discouraged short-term behavior.

In summary, rural industrialization was a stag-hunt type of coordination game. If the coordination failed, the household responsibility system would be used to direct resources to the farming sector. If the coordination equilibrium was reached, the TVEs would be established and resources were shifted to the rural industrial sector. Both the monetary incentive and moral incentives were created to enlarge the attraction basin of the coordination equilibrium (Sen, 1967). If the rural industrialization occurred in the rural social context, the “socialist tradition” including organizational resources such as cadre-centered network and collectivist culture lowered the risk and cost of coordinating the rural industrialization, making the whole system move towards the coordination equilibrium. Hence, the embedding of economic activities in the cultural system was essential to the success of rural industrialization.

Understanding the common property institution

Although the collectivist culture promoted rural industrialization, the collective nature of TVEs was supposed to lower the efficiency of the economic system. According to the orthodox economic theory, the common ownership could not provide individuals with sufficient incentive, resulting in rent dissipation. Thus, the highest value of resources could not be achieved. However, alternative means other than the market institution would be introduced to minimize rent dissipation. In this case, the common property institution developed a specific structure to lower transaction costs. Information on the behavioral pattern generated from this specific structure was compressed into cultural norms, which were further internalized into a cultural trait of individuals and thus reinforced the common property institution. Therefore, to explain the persistence of common property institution, I will study the cooperation-fostering mechanism underlying the structure of interactions in a community and the informal rules governing this interaction.

Standing on the shoulders of other scholars will make things easier. Ostrom (1990)

developed a framework to understand the community governance of common-pool resources. She summarized several principles for enduring common property institutions. In my opinion, these principles concern four most important aspects of the common property institution: boundary, rule, monitoring, and punishment. Besides, Bowles and Gintis (1998) developed a similar, yet more technical model to demonstrate the moral economy of the community. They focused on four aspects: reputation, retaliation, segmentation and parochialism. What Ostrom and Bowles, and Gintis proposed to explain moral economy share something in common. For example, clearly defined boundaries could result in parochialism. The multilateral reputation system enabled a monitoring mechanism and retaliation is similar to punishment. In addition, segmentation affects monitoring and punishment. I will approach the understanding of the persistence of TVEs from a perspective inspired by their contributions.

Boundaries

The problem of boundary is essential to the community governance. Ostrom distinguished between two boundaries: the boundary of a pool of resources and the boundary of users of resources. The latter one is of interest. In the case of TVEs, the boundary of users of resources is equivalent to the membership of a community. The introduction of the membership system was to restrict access to resources so that they would not be over-consumed or depleted within a short period. Che and Qian (1998b) also express the similar idea and suggest to interpret the boundary of TVEs at community level instead of at enterprise level.

Bowles and Gintis incorporated the idea of boundaries into their definition of a community. As to them, a community is a “structure of social interaction characterized by high entry and exit cost and non-anonymous relationships among members”. This definition implies that a community is a quasi-closed group due to the presence of high entry and exit costs. We must notice that entry and exit costs could be raised by those who form a group to occupy public resources with intention, to prevent someone else from consuming the resources other than the group members. It means that the community is self-organizing. Besides the potential risk of overconsumption, the frequent entry and exit of members would also impose a negative impact on community governance, for example, increasing the cost of monitoring and punishment. As Bowles and Gintis indicated, the community is characterized by the non-anonymous interaction among members. Only when the high entry and exit costs lowered the mobility of members would long-term and non-anonymous relationships be developed from the recurrent and frequent interaction among members. The existence of non-anonymous relationships enables the mechanism of reputation, retaliation and segmentation, thus preventing the community from falling apart. Moreover, parochialism as a cognitive bias arising from the differentiation between members and non-members underpinned the self-isolation of the community. A cognitive barrier to entry and exit was imposed to

reinforce the common property institution.

With respect to an enterprise, the boundary was to be defined by the contract in relation to its founding and capital structure and employment, with the applicable contract law. In the case of TVEs, the contract and contract law was missing. We should note that running TVEs was a strategy based on the consensus of the entire members of the rural community. Every resident had the right to claim a share of common property. Moreover, Chen argued that the local authorities influenced the decision-making of TVEs and aligned the corporate and community interests. In that regard, the boundary of ownership of TVEs was blurred.⁴⁸ Hence, the de facto boundary of TVE was defined by the territory of villages and towns.⁴⁹ Users of resources were limited to the members of the community, and membership was based on the kinship and demographic relationship thus imposing barriers to entry and exit. A person coming from a remote area would not be allowed to share common property in the community. He or she could only establish the employment relationship with the local companies, but had no share of ownership and would be not allowed to influence the decision-making in TVEs. This was because of a lack of trust between the residents and migrants. The reputation system did not work as there was little information about the migrants. The mobility rate of migrants was expected to be high so that they could escape the punishment with low cost. The social capital only existed among the community members and the lack of social capital meant that community governance could not be extended to a wider range.

Huaxi village, which ran a huge corporate group, divided the workers into three categories, core villagers, the villagers who lived nearby and migrant workers. Due to rapid growth, Huaxi village merged several nearby villages and thus expanded the human resource pool. However, it could still not meet the increasing demand for labor, resulting in the employment of migrant workers, who were not equally treated. The community only referred to Huaxi village in its original territory, which showed the conflict between the optimal size of a community to generate social capital and the economy of scale.

We also find evidence in land policy to support the argument. Only the village residents are entitled to farmland, the right of which was given up automatically when they leave the village. This principle was extended to other collectively owned resources. Once a resident's relationship with the community broke down, the resident's entitlement to common resources was removed.

In addition, parochialism also prevailed in Chinese towns and villages. First,

⁴⁸ See Chen, Jianbo, Xiangzhen Qiye de Chanquan Jiegou jiqi dui Ziyuan Peizhi Xiaolv de Yingxiang (The ownership structure of TVEs and its impact on efficiency of resource allocation), *Economic Research Journal*, Issue 9, 1995, Pages 30

⁴⁹ Yin studies the case of Nanjie village and comes to the similar conclusion. See Yin, Desheng, The Empirical Observation and Analytical interpretation of Nanjie Village Mode: A Case Study of Changing of a TVE's Ownership System, *Management World*, Issue 4, 2001, Pages 173-179

population mobility was low in the rural areas. Settlement such as towns and villages emerged because of the human need for cooperation. The cooperation was maintained by recurrent interaction enabled by geographical stability. Therefore, if residents leave the settlement, they could no longer benefit from the cooperation and their attempt to reside in another settlement would involve high costs. Once the communities were formed, the population mobility would be lowered. Second, government policy fostered parochialism. At that time, the household registration system restricted labor flow from the rural to urban areas. The mobility of labor was thus low, if not non-existent. As a result, the demographic stability of a rural community was reinforced, and the networked nature of a social environment in which the common property institution was embedded. Quasi-closed communities were formed and the membership was quasi-permanent and inheritable if not withdrawn.

Networks

Network is something that was rarely discussed with respect to common property institution. The boundary only defines the group that has access to the resources, but does not indicate how the group is organized. In economics, two kinds of organizational form receive a lot of attention. One of them are the focus of neoclassical economics, which Demsetz terms highly decentralized structure. Market has such a structure while coordinating individual actions by creating and transmitting price signals. The other one is to the contrary, featuring a highly-centralized structure. A typical one is the hierarchical structure which is adopted by state and firms. Instructions flowing from top to bottom are the major means maintaining the operation of the system.

These two organizational forms can be also understood from a network perspective. The market in the neoclassical sense (perfect competitive market) is a network without a focal point. Every node weighs alike. But if the market shows a monopolistic structure, it is a network with key nodes. The hierarchical system has a stratified structure with the nodes connected only with the nodes above and below. These two kinds of network, the totally decentralized one and stratified one, has the advantage to coordinate actions on a large scale. A market can connect the producers and consumers across the world. Also, a government could have million employees and still work without big problem. However, if we look at what happens at local level, we could probably find that a third kind of network is also of importance. Aside from the decentralized network or the network with an absolute top, the network with key nodes shows both flexibility and coordination ability.

In such a network, key nodes are those nodes which has the relationships with most of other nodes and thus making the network overall connected. As Watts (2003) indicates, even when the number of nodes is extremely large, the distance, measured in individual relationship, between two nodes is not long. But the quality of relationship diminishes as it is getting longer. It changes from a strong tie to a weak

tie if we are talking about the friend of a friend. Taking function as a focal point, the key nodes develop the direct relationship with most of other nodes thus making a medium-sized network operational. In the traditional society, a clan's patriarch was a key node in the network. After the socialist revolution, the cadres occupied the vacuum position left by the patriarchs. As a result, the cadre-centered network emerged. As one may see, every successful story of an individual TVE begins with an entrepreneur who was former cadre or still cadre by then. These cadre-entrepreneurs were praised for their business talents and innovative spirits. But the network aspects of their virtue are also interesting. As the key nodes in the network, they were doing two things with lower cost. First, while gathering and processing information necessary for the industrialization at the top, they centralize the decision-making with respect to the commonly owned resources. They make better decisions when it comes to a large amount of resources, like managers in the private firms. Second, they have high social statue and are trusted by villagers. In that kind of circumstance, they are able to coordinate the expectations and actions of peasants and start the industrialization project. Certainly, the prerequisite to the emergence of cadre-centered network is the common property of resources.

On the contrary, if the decentralized network such as the network enabled by household farming system dominates the social system, no center was maintained and it is difficult and highly risky for an individual family to run an industrial entity. Also, the cadres and village governments did not have sufficient capital to start such a program. As to the centralized network such as the network in people's commune, the unidirectional feature of network would lead to the malfunction of information channeling mechanism. The presence of key nodes in the network does not mean that the entire network is controlled by these key nodes. It is more likely that the key nodes and normal nodes cooperate and function differently. Hence, the mechanisms, which will be discussed later, are developed to solidify their cooperative relationship thereby making the common property institution well-suited to the early stage of development of the embedded market.

Before we set out to discuss the specific mechanisms, there is one more question about the emergence of cadre-centered network. The rise of such network lies not only in cadres' prestige, but also in the resources they control. So if they start with a considerable amount of collectively-owned resources, the cadre-centered network is more likely to rise. In this case, the function of social capital was enhanced by the physical capital and the common property institution, being underpinned by cadre-centered network, is self-generating as long as social capital as well as physical capital are available.

Rules

Once the boundary is drawn, the most important issue will be the rules. Ostrom called them "operational rules". I will distinguish between two kinds of rules, the

constitutional rules and the operational rules. Of course, constitutional rules do not refer to the top-ranked laws of a nation. I use this term to refer to some fundamental rules about the allocation, use and transfer of common resources. These rules were fundamental because they determined the way of development for towns and villages. Hence, the creation of constitutional rules must be based on the participation of all members. Otherwise, the cohesiveness of the community would be damaged.

Let us reconsider the case of Zhaojiabao village. After the unsuccessful investment in the paper manufacturing industry, the village committee was questioned about their easy decisions. A meeting was held by the party committee to handle the trust crisis, with the constitutional rules concerning the common resources announced. First, the radiator factory should remain controlled and managed by the collectivity while the management right of small factories and fruit gardens could be contracted to individuals. Second, some shares of the radiator factory were distributed to individuals given that the collectivity was the biggest shareholder. Third, the farmland was divided into two areas: one area was reserved for grain production, and the other used to produce cash crops. Fourth, the wage rate should be associated with the contribution. Hence, the salary of managers and engineers was higher than that of normal workers. The wage gap would not be big because the wage rate was determined by a non-market mechanism. These rules were the result of negotiation and compromise, and supported by most of the residents. As shown by this case, the most important function of constitutional rules is to produce the legitimacy for the initial allocation of common resources and the rules governing the allocation of common resources as well.

Other than the constitutional rules, the operational rules specify the access to the resources and thus prevent inefficient usage. For TVEs, written rules governing the production process and management were drafted and “enacted” to maximize the output given the constraints. As shown by the case of the Yonglian steel manufacturing factory, there were regulations such as “regulations of quality control”, “regulations of civilized production”, “regulations of cost control” and “regulations of yielding rate”. In addition, various manufacturing contests were held among workers to provide greater incentive because the ranking in the contests affected the individual workers’ wage rate. Ownership of resources provided the owner with an incentive to protect it, use it efficiently and maximize the income it generated. However, in the absence of a clearly defined ownership, many regulations were introduced to perform a similar function. The quality and quantity of products were checked, production cost controlled, and attitude towards work assessed. The regulations were refined, updated and augmented to govern almost every aspect of the manufacturing and business process, with the aim of preventing free-riding, shirking and other opportunistic behaviors. It was a natural choice for a non-private organization that attempted to avoid rent dissipation.

According to Ostrom, the participation of community members in making and

modifying rules should be ensured and the rules matched to the local condition. In the above cases, the community members tried to influence the making of rules. In that sense, the rule-making process was to some degree decentralized. Hence, most of the information critical to the matching of rules to the local conditions could be incorporated into the making of rules. That is very important for the survival of a non-market business organization. If rules could not be matched to the local conditions, the allocation of resources could be inefficient. Disputes over the rules might arise and resources would be put into their resolution.

Monitoring

Even if the rules were fully legitimate and matched to the local conditions, there would be an additional problem. If it was beneficial for individuals to break the rules and the cost of improper behavior was sufficiently low, they would, under the assumption of full rationality, break the rules. However, there was no external monitoring for the TVEs because the coercive power was removed from the rural areas. Therefore, the community must develop self-monitoring capabilities. I will examine two kinds of monitoring relationships. First, monitoring should be imposed on the managers due to the presence of “principal-agent” relationships. In the case of TVEs, the principals were not board directors, but community members who were conscious of their duty to monitor the performance of the managers even though they could not directly dismiss them.

Yang had studied how individual workers try to influence personnel matters. He found that workers were eager to influence both the appointment and dismissal of general managers, as well as the distribution of income. At the same time, they paid little attention to the recruitment and assignment of jobs, which was the manager’s task. Managers also determined the wage rate and were responsible for product development. Besides, Yang found a negative relationship between the performance of TVEs and workers’ incentive to monitor the managers. In developed areas, workers did not pay as much attention to the appointment and dismissal of managers as opposed to the wage rate. However, in less developed areas, workers were eager to influence personnel matters.⁵⁰ Yang’s study indicated a negative relationship between workers’ eagerness to influence personnel matters, the level of development, and labor mobility.

Yang’s finding was interesting, and could be explained using the “voice-exit” theory developed by Hirschman (1970). In a private enterprise, most employees only pay attention to wages. If they were unsatisfied with the performance of the managers, they would “exit” and move to a new job to show their dissatisfaction. On the other hand, workers of TVEs would try to influence the personnel matters and express their dissatisfaction through their “voices”, because they were also “shareholders” of the

⁵⁰ Aoki (1994) found that the employees in the Japanese firms also tended to influence the management. It was because they were lifetime employed. So, the Japanese firm was, to some degree, comparable with the community.

TVEs. The “exit” strategy was too costly for them due to the association between ownership and membership. Now, we can explain the findings described above. In developed areas, the private ownership dominated the economy and reduced the “exit” cost. Although the peasants respected and trusted the “able men”, the trust was generated from the good economic performance of the TVEs. Poor economic performance affected the peasants’ motivation to monitor the able men.⁵¹ If the local authority could not solve the problem of management, the workers would choose to return to the household farming. That was the ultimate threat and highly credible.

Workers gave pressure to managers via their “voices”, while managers monitored workers by controlling the quantity and quality of products, and assessing the workers’ performance. As we know, the community was characterized by recurrent interaction among members. Hence, information cost was low for the community members. Should there be a high cost to assess product quality, the managers could use the information about the workers’ ability and attitude towards work instead. Owing to the low information cost, a reputation system was developed to brand the able, less able, and rule-breakers, maintaining the cooperation among community members.

Interestingly, although the individual had an incentive to shirk, he/she also had an incentive to monitor. Also defectors will monitor, avoiding other defectors bilking out cooperators. And improper behaviors would decrease the welfare of community members as they were “shareholders” of the TVEs. Unlike the employees of state-owned enterprises, the individual had an incentive to increase overall productivity because it was associated with individual interests. Moreover, TVEs faced hard budget constraints. They would fail if they could not be competitive, unlike the SOEs which would be rescued by government bailouts. The collectively owned enterprises must develop a monitoring mechanism to increase productivity, with the size of rural communities being appropriate for using a reputation mechanism.

Legitimacy

Sanction, retaliation, and dispute resolution are of importance in sustaining the social order.⁵² However, I will rather put the discussion in a footnote and discuss the legitimacy problem threatening the existence of the TVE sector. There has been little discussion about the legitimacy of TVEs. During the transition era in China, legitimacy was generated from three sources: the attitude of authority, the economic performance, and the principle of egalitarianism. First, the outside authority should

⁵¹ I don’t mention the external monitor from the local government. Actually, the township government and village committee was a part of system. Sometimes the officials were the TVE managers. I will come to this issue later explaining the role of local government in the rise of TVEs.

⁵² According to Ostrom, a graduated sanction scheme is optimal for the communities that try to manage the commons. A graduated sanction is appropriate given the nature and structure of personal ties. It must be avoided that personal ties were undermined due to harsh sanctions on some minor improper acts. And it should also be avoided that repeated opportunistic behaviors must be punished properly so that the community would not collapse.

respect the common property institution. It is also one of Ostrom's principles for managing the commons. In China's case, local governments worked closely with TVEs and protected them from the central authority's interference. The central authority expected good economic performance of the entire system as a proof of success of the reform. Therefore, there was only a small chance that the outside authority would impede the rural industrialization.

Second, economic performance of the TVE sector was far beyond everyone's expectations. It created many jobs, promoted local growth, and provided a lot of taxes and fees to governments. As long as the TVEs were profit machines, everyone loved them. However, as mentioned earlier, if the expectation that the TVEs would make higher profits than farming was not fulfilled, the peasants would probably withdraw the industrialization plan and go back to the farming sector. The monetary incentive is of importance as long as the resource allocation is concerned. The TVE sector must ensure growth so that it could provide the participants with sufficient monetary incentives. On this point, the impersonal market economy coincided with the moral economy.

There is a point that they may differ on. Instead of equality of opportunity, the moral economy showed a preference over the principle of egalitarianism, which resulted in the equal distribution of income and undermined the monetary incentive. Wen (2010) observed that in the rural areas of Jiangsu province, it was generally agreed that high income jobs created by TVEs be offered to low income families first. This is despite that they only had low-efficiency labor such as girls and young adults, which was one of the reasons why they were poor. TVE managers could easily find some strong adults elsewhere to replace them. The moral incentive must be generated to sustain the cohesion of social order in the rural areas. This was one of the difficulties that the moral economy faced. Although a balance between moral and monetary incentives must be achieved, the practice showed that such a balance could hardly be stable. For TVEs, we can find that the wage rate was in fact associated with the contribution in terms of market value. The suppression of the moral incentive by the monetary incentive resulted in the attempt to privatize the entire TVE sector.

Considering all the aspects discussed above, the TVE sector has to be a part of the moral economy, which is not necessarily contradictory with the market economy. It may even be complementary to the market economy during some stages of development. Even when scholars acknowledge the existence of the moral economy, they usually think that it exists only in primitive societies. However, as I will suggest, a deeper understanding of the moral economy may help us find some key factors determining the success and failure of economic reform. In addition to well-researched terms such as capital accumulation, overall productivity, unlimited labor supply and so on, culture will be a new focus in the study of development policy.

The superiority of TVEs in the transitional economy

I have shown that the common property institution could not fail because of the underlying self-preservation mechanism. However, this does not take into consideration the environment surrounding TVEs. A rabbit can survive in an environment where there are no wolves, but it cannot survive when the wolves enter the ecosystem.⁵³ There were many cases suggesting the advantage of community governance of economic activities. Community governance is applied if the cost of defining property rights and finding prices is prohibitively high. For example, fishery, irrigation, and use of underground water are usually managed by the community because of the high cost of using the price mechanism. Despite the numerous cases of community governance, private enterprises significantly outnumber collectively owned enterprises in the economic domain, with the reason being that the market system develops various mechanisms to lower transaction costs. Hence, in most cases a private property system was the only efficient institution to solve resource allocation. In that sense, according to the economic theory the massive emergence of TVEs during the 1980s and 1990s was abnormal. According to my hypothesis, the key point to explain the emergence and success of TVEs is the interaction between the TVE sector and the institutional environment surrounding them.

The special situation that the Chinese TVEs faced was the economic transition, which means that the market system was established from the very beginning. During the early stage of market development, transaction costs were extremely high, and different mechanisms were developed to lower such costs and also the uncertainty. For example, the regular marketplace provided a place for meeting and trading, and was the simplest way to coordinate the expectations of the trading parties. They could exchange information and negotiate the prices in a specified spot and at a specified time. Mechanisms had also undergone continuous development. The marketplace, personal networks, professional services and online auctions were different mechanisms with the same aim, to lower the costs incurred by market transactions. Should the cost of using such mechanisms be lower than the benefits they add to the economic system, resources would be diverted to their usage. Otherwise, market participants must endure the inconvenience until the market grew to a considerable size so that the economic system could afford the more expensive, yet more convenient mechanisms.⁵⁴

In that regard, the market was its own rival. During the early stage of development, the size of the market was limited by high transaction costs. In a small and segregated market, specialization and coordination could only generate a relatively small benefit compared with its enormous cost. Resources would therefore not be directed to such specialized activities which facilitate market transactions and reduce transaction

⁵³ What I state about rabbit and wolf serves much more as a metaphor, but not a simplified model of real world.

⁵⁴ Indeed, they are only expensive to the small market. As the market grows, they become the economy ways to lower the transaction cost further.

costs.⁵⁵ A primitive market system did not work as well as the integrated global market of today. The structure of the market was also quite different. According to Coase's exposition, transaction costs involved mainly the cost of searching for, and negotiation of prices. Hence, one consequence of high transaction costs was the non-existence of price signals and a lack of market transactions, unless alternative mechanisms existed to lower transaction costs or coordinate the economic activities in a non-market way.

To unravel the puzzle of the emergence of the market, we should review the history of human civilization. China's transition provides a perfect research objective to see how the market system was established without any foundation, and what kind of problems it would encounter during the course of its development. First, as shown above, the underdeveloped market could only grow slowly and would develop a segregated structure. One important point was that the market for manufactured products grew faster than the factor market, including the labor market. This was unsurprising because price signals were transmitted along the line from manufactured products to factors. Second, people negotiated and determined the prices of manufactured products. These prices further determined the factor prices. As the factor market was a derivative market, the market for manufactured products and the factor market were established in sequence. In some extreme cases, the factor market could not be established in the short run equilibrium. Without the factor market, market transactions would have been extremely decentralized and segregated.

China's reform policy exacerbated the problem. During the transitional period, the market emerged as a result of the top-down imposed reform and bottom-up spontaneous actions. As the top-down strategy, the gradualist approach was applied, resulting in the slow-paced liberalization of the market. Looking at Russia's experience, the introduction of a market system in an economy that had been governed by a central plan for a long time was a complex process. China handled this issue with more prudence and sophistication. However, the gradualist strategy slowed down the pace of price liberalization. When there was no price signal, no transactions were conducted.

It was the dual-track pricing system that prevented a big-bang style of liberalization. However, it created an underground, corrupted market that involved crime, fraud and state speculative actions. SOEs monopolized the market during that time because they could take advantage of their superior position in the economy. By contrast, the non-state sector had little information on the market, such as information on demand, supply, and price. Information was mainly transmitted through an informal social network. This generated high risk for companies because their decision-making process was based on market information. Nevertheless, the market for manufactured products quickly grew.

⁵⁵ The model in part three depicts such cases.

Compared to the growing market for manufactured products, the labor market was highly regulated and small in size. Demographic stability helped to define the boundary of the community. In turn, this clearly defined boundary lowered migration rates. Moreover, the policy did not encourage the mobility of labor. The household registration system, in its strictest form, almost eliminated the possibility of migration, not to mention that before 1984 it was illegal to have more than eight employees in a private business. The high migration cost slowed the growth of the labor market. Apart from regulatory issues, the culture impeded market-driven mobility and worker allocation. As mentioned earlier, personal relationships exclude formal contracts that require the formulation of rights and obligations in relation to a specific action. In the Chinese rural areas, the signing an employment contract was insulting both employee and employer.⁵⁶ As such, labor market, at least in the rural sector, was not established or was only primitive with regards to scope and scale. Chen (1995) estimated that 40.5% of total jobs created by TVEs were assigned to the peasants by the local government. Only 17% of workers were recruited from the market.⁵⁷ Various strategies were implemented to meet the demand for labor, for example, the merging of poor villages into the rich village. One of the consequences of a lacking labor market was that individuals did not know the value of labor, or the value of skills, experience and talent, as they were not priced. Although the wage rate in TVEs was associated with the contribution level, it was not based on market prices but on the consensus of residents. Hence, individuals were not motivated to define the ownership of the labor force. By being unaware of their market value, they did not oppose the pooling of human resources. Moreover, unlike the private property institution, the common property institution introduced the moral incentive. If the monetary incentive was not sufficient, the moral norms came to play a central role in sustaining the cooperation. Hence, dissatisfaction arising from the weak association between contribution and reward would be suppressed by the moral norms.

Moreover, the land market, as mentioned in previous chapter, had not been established because the land ownership was not well defined. In China, land was collectively owned. The use right was assigned to individual households, which could be transferred partially. And individual households were not allowed to use farmland for industrial production unless the government issued the permit. Therefore, land market did not work well because of the incomplete land tenure right and the governmental intervention. In that kind of environment, the collective TVEs had the great advantages over the private firms. First, they were granted the full right to use collectively owned resources including land as long as they were collectively owned as well. Second, they had institutional ties with the local governments. So the land policy discriminated between collective TVEs and private firms. The former was

⁵⁶ I have talked with a government official who tried to persuade his father to expand agricultural production. His father refused his suggestion and told him that it would be a shame to employ his brother. He could ask him to help and give him gifts as rewards but would never establish a cold contractual relationship between them.

⁵⁷ The figures demonstrate the job market in 1995. According to Chen, the figures indicate the governmental inference with the operation of TVEs. It should be avoided. I would argue the opposite. This kind of control reflects the embedding of economic activities in the social system. The local government watch the TVE management so that it will not further own interest.

better served.

In addition, the collective TVEs had a better access to the capital. Actually, there were two financial market, a formal one and an informal one. In the informal market, market participants did not know the price of capital. The value of capital was the current value of total future incomes it generated. The market system was introduced to measure investment returns accurately and thus provide the investors with the incentive to invest. However, if market information was incomplete, investment returns could not be predicted. Investors were not willing to bear the high risk alone, but share it with others. Hence, the privatization of TVEs was not intended during the first few reform years. Relatives of the able man began to persuade him to appropriate the common property only after the sales channel had been established and profits granted.

So the household-run establishments, which is categorized as private business, could only obtain starting up capitals from the relatives because only the information cost was low for relatives. Such information was not channeled in the market, as it was too costly to establish a market-base channel. In addition, an individual household cannot afford to borrow the loans with high interest rate. The situation was similar in the formal financial market. The collective TVEs, big in size and well served by the local authorities, had better access to the bank loans.

In a lack of the factor market, how would resources be allocated and production organized? In his insightful paper of 1983, Cheung furthered Coase's theory of the firm, arguing that the replacement of the market with the firm was a choice of different contractual forms. According to him, the contract for manufactured products or services was replaced by the contract for working time. However, during the early stage of transition it was not possible to coordinate the collaboration among a large number of participants via contracts of employment as the factor market was far from perfect. In China's case, it was partially because the market was on the early stage of development and thus small in size, too small to afford the transaction cost. Another reason was that the factor market, including labor, land and capital market, was still highly regulated by the government. Because the transaction cost was overwhelmingly high and governmental intervention persisted, the market developed an extremely decentralized structure.

I will illustrate it with the following equation:

$$Y(L_1, L_2, \dots, L_n, K) = \frac{\partial Y}{\partial L_1} L_1 + \frac{\partial Y}{\partial L_2} L_2 + \dots + \frac{\partial Y}{\partial L_n} L_n + \frac{\partial Y}{\partial K} K$$

An integrated form of production requires a string of information of factor prices and the liberalization of factor market. If the case is to the contrary, a decentralized structure emerged. It implies that the production form of the society was transformed

to be $Y(L_1, K)$, $Y(L_2, K)$... $Y(L_n, K)$. The production unit was slimmed down to the minimum size. Hence, information about the individual's contribution, the incomplete land tenure right and the interest rate of capital was of no importance. With respect to the production side, the only necessary information was the price of manufactured products or services. Small businesses, most of them household-run establishments, were connected to the market via contracts for manufactured products or services. Statistical findings support this hypothesis. First, in the statistical yearbooks, TVEs that were not collectively owned were divided into two groups, the household-run business and the multi-household-run business. In 1984, collective TVEs accounted for 30.72% of all TVEs while the household-run and multi-household-run establishments accounted for 69.28%.⁵⁸ It seems that private enterprises should be the objective of the research, but collective TVEs contributed to 71.37% of total revenue made by the TVE sector. Though large in number, the total contribution of the household-run establishments to the overall output was extremely low. The figures show that household-run establishments were small and weak. However, taking transaction costs into consideration the segregated structure was still efficient.

However, in the case of China's transformation, there was another way. The common property institution was able to coordinate the economic activities on a big scale and a wide range, yet at a low cost and in a non-market way. This non-market institution came to play a complementary role in the market system. The advantage of a common property institution could be summarized in two points - low costs and big scale. With respect to low costs, the work of a common property institution required no additional physical capital or labor force, but only the common beliefs among the community members. The community can be regarded as an enlarged household. However, compared with a household, a rural community was bigger in size and must develop some mechanisms to maintain the cooperation within, for example, the subordination to the collective interest, the monitoring system, defining the boundary, and creation of moral incentive. Chinese rural society had developed these mechanisms before the start of the economic reform, with institutional resources preserved by the socialist tradition. The culture, unlike physical capital and labor force, was the common belief and once it was formed, maintaining it incurred little marginal cost.

The second advantage of the common property institution was its ability to coordinate the economic activities on a bigger scale and wider range than the private property institution, given the imperfect market system. This was because the common property institution did not need the prices to guide resource allocation and incentive provision. As shown above, the community showed a strong preference for egalitarianism. Under the "veil of ignorance", maximizing the minimum income was a strategy preferred by the participants. As individuals did not have the access to information about marginal output, they were willing to share income equally to avoid bearing the extremely high risk by themselves. A household who thought it could

⁵⁸If the household expected that total revenue made by the household-run establishment was higher than the revenue made by the household farming or by the collective production, he would choose to take the full market risk.

manage the risk would choose to run a small business. However, these small businesses were not only troubled by the shortage of information, but also faced competition from the cruisers (collective TVEs). Hence, a household would likely choose to participate in collective production over running its own business unless the market risk was substantially lower.

Therefore, we have the following dynamic analysis. At the beginning phase of the transition, the common property institution emerged to coordinate rural industrialization. The industrialization prevented the resources to be directed to the low value added farming sector. Certainly, the prerequisite for the success of the industrialization was the participants' self-subordination to the collective interest, with it being their best strategy compared to independent actions. As the industrialization proceeded, the market offered more opportunities to participants and transaction costs were lowered continuously. Hence, resources flowed from the community-controlled pool and the farming sector to the private industrial sector at an accelerating pace and on an increasing scale. However, the flow of resources was not random but patterned. Only households which had better access to capital, technologies and market information, with individuals who were educated, bold-spirited, talented in doing business, were able to, and willing to join the market competition by opening up a private establishment. When the market expanded, the risk and cost of running a private enterprise was lowered. In other words, the barrier to market entry was lowered. This generated two outcomes. First, more resources were attracted to the private sector. Second, household-run establishments survived with a higher probability and were able to grow to a relatively large size.

However, experience tells us that although the barrier to market entry was removed, many people still preferred to find jobs in the firms instead of opening a new business. Hence, disadvantaged individuals would insist on working together in the collectively owned enterprises, only better off if they stay in an organization favoring the disadvantaged members. Counter-intuitively, the most able entrepreneurs would also work for the collective TVEs. As they could only maximize the value of talents while running resource-intensive entities, they would not easily give up their positions in the collective TVEs. Indeed, monetary return was not compared with the non-monetary return derived from running a big company and leading of hundreds of workers. It is worth noting that the non-monetary return was not only the inner feeling of satisfaction, but also valuable measured in the market terms. For example, great reputation would be gained from being the head of a big company and could turn into a monetary reward in the future. It was not surprising that there were a lot of stories about the able men. Only when the market was well developed and the mainstream rhetoric justified the behavior of free exchange and wealth accumulation, the strategy of privatization awoke the interest of TVE leaders and local government officials. Along with the privatization of TVEs, the labor force was freed from the control of the community and brought to the free market.

In summary, the common property institution enabled a big scale and wide range of economic cooperation within the rural industrial sector. The economies of scale were therefore realized for the collective TVEs and important to the survival of the infant rural industrial sector. We can say that, during the transitional period, the TVE sector captured the factor market and developed an integrated form of production, though the size of collective TVEs was still limited by the size of social network.

6.5 State, Market and TVEs

To gain a full understanding of the success of the TVE sector, we should not separate the TVEs from the surrounding environment, including the institutions they interacted with. Two kinds of relationships are of particular interest. First, the relationship between the state and the TVE sector was a popular topic among scholars. Without the support of the local authorities, the TVEs might not have grown so quickly and well. Also, although not as popular a topic as the interaction between the state and the TVE sector, the relationship between the market and the TVE sector is very important for understanding how a personalized transaction system worked.

State and TVEs

As a political organization, the state usually had a complicated structure, with different structures generating different policies and strategies. The Chinese political system had a multi-layered structure, which assigned two roles to the local authorities. They were simultaneously the local branch of the central government and the representative of the local interest. However, the roles were not always balanced. If the local authority was remote from the centrality in the hierarchical system, it would act more like the representative of local interest, particularly the village committee, which was elected by villagers but not appointed by the upper level of administration. The head of the village committee could not obtain promotion in the bureaucratic system because they were not cadres. Hence, they were only interested in the monetary rewards or non-monetary rewards such as reputation and high status. Although officials of the township government were tempted by the higher official positions, there was an almost non-existent chance of promotion. Moreover, the market reform showed Chinese officials the power of money. After the tax reform, the township government was strongly motivated to promote local economic growth and to collect more revenues. Individual officials also wanted to, and were able to benefit from the economic growth.

Once the tight control imposed by the centralized governance institution had been abolished, the decentralized nature of the Chinese political system granted local authorities more autonomy so that they could introduce and implement policies which turned out to be effective to local issues. The local authorities tended to avoid the influence from the top down, and re-established the social order. The dual roles of the local authorities were very important to the re-establishment of social order, and thus

the success of rural industrialization. First, the organizational link between the local authorities and the state-owned sector enabled the establishment of a channel to shift information and resources from the state-owned sector to the TVE sector. Second, it provided the protection for the infant TVE sector. Li (1995) argued that the protection from the government was the key to the success of TVEs in an imperfect market. According to him, vaguely defined ownership was efficient because it motivated the local authority to help the TVEs.

As to the role of channeling resources, I will show how the capital was provided to the TVEs with the help of the local authorities. Zhou et al (1987) studied the financial data collected from the sample TVEs across ten provinces. He found that the start-up capital of a TVE came from various sources, with more than 38% from the loan provided by the banks. Local governments provided 10% and part of the money was subject to payback. About 24% was collectively owned capital. Moreover, the TVEs' demand for capital would not reduce during the development. Zhou observed that TVEs had a high debt to asset ratio around 55%. 50% of the debt was the loans made by the banks. The second biggest source of debt was the accounts payable, accounting for about 24%. According to the statistics, we can come to the conclusion that the starting up and further development of TVEs relied heavily on external financing, among others, the bank loans. However, TVEs did not possess many assets and their capacity to make profits was also unknown to the financial intermediaries. Therefore, it was difficult for TVEs to raise the start-up capital and obtain more capital whenever needed.

Local authorities came to solve the problem. First, they financed the starting up of TVEs using government revenue. This was insufficient. Second, As Jiang (2000) pointed out, local authorities softened the budget of TVEs and also their commitment to repay the loans. They were able to interfere with the credit policy of the banks because the banking sector was under the control of the local administration. Because of the collective nature of TVEs, local authorities were highly motivated to promote the TVE sector, as they would take money from one pocket, the banks, into another pocket, the TVEs. Jiang argued that the aggressive expansion of TVEs (even more aggressive than SOEs) was the evidence for the prevalence of local corporatism. Conversely, the banks were willing to make loans to TVEs endorsed by the local authorities because the local authorities knew the performance of the TVEs well, and the TVEs that they supported must be the best ones among them. A single TVE might fail while the TVE sector as a whole could not. With their contribution, the growth of the market was strong and its expansion never seemed to slow down. It meant that there was no systematic risk which might have led to an economic crisis. This kind of soft budget was only good for the economy, at least during that "special" period.

Local authorities established a relationship between the banking and manufacturing sectors, depicted by the following figures.⁵⁹ In 1995, the debt to asset ratio of

⁵⁹ See Jiang, Changyun, Xiangzhen Qiy Zijin Laiyuan yu Rongzi Jiegou de Dongtai Bianhua: Fenxi yu Sikao

collective TVEs was 62.84%, while that of private TVEs was 27.45%. The big gap could be partly explained by the different size of enterprises. However, size was not the only reason. What the banks were really concerned about was the loan applicants' ability to make a profit. Such information was not observable for the banks. Hence, information delivered via the government was very important. In some cases, as mentioned, the local governments instructed the bank to make loans to the collective TVEs, based mainly on the information they had. Thus, collective TVEs had better access to financial services with their tight relationship with the local governments. Their debt to asset ratio was not lower than that of the SOEs.

Besides capital, local authorities also helped the TVEs to gain access to other factors such as raw materials. The application of a gradualist approach meant that the door was opened slowly. Initially, the purchase of raw materials was very difficult for non-state-owned enterprises. In the command economy, the bargaining power of the local authorities was bigger than that of individuals. They were also familiar with the flaws of a central planning system and were able to get raw materials at a low cost. In 1984, the dual-track pricing system was introduced to liberalize the market. Under this policy, the economic system was corrupted and the state-owned sector monopolized the supply of raw materials. "State speculation" appeared in the presence of a price gap between planned materials and marketable materials. High-ranked officials and the managers of SOEs made profits by shifting resources from the state-owned sector to the non-state-owned sector. Although corruption would harm economic efficiency in the long run, it accelerated the liberalization of the market in the short run. The resources flowed, like a waterfall, from the plan to the market. The institutional link between the local authorities and the state-owned sector was particularly useful in directing the resources to where they generated highest value, that is, to the TVEs.⁶⁰ Besides, the local authorities also assisted the TVEs to access market information and to adopt the advanced technologies. For example, local authorities organized trade fairs where the TVEs could exchange market information and find trading partners.

Another role of the local authorities was that of the protector. First, the local authorities protected the TVEs from political interference. The central authority could only know the happenings in the rural areas through the local agent because they had an advantage in accessing the local information. Conversely, the state policy was also made known to the ordinary people by the local authorities. The local authorities were the switch of information flows so that they could filter the information to change the political climate and further their own interests. Second, the local authorities protected the TVEs from market failure. Li argued that, in an imperfect market, the property right was not to be enforced and transaction security was not ensured due to what was

(Fund Resources of Township Enterprises and the Dynamic Change in Their Financing Structure: Analysis and Consideration), *Economic Research Journal*, Issue 2, 2002, Pages 34-39. The figures are found in financial data of TVEs(1994), the development of TVEs 1995-1998, A summary of Chinese statistics (1999).

⁶⁰Though TVEs could purchase the materials in the market, the price was much higher and it would lower the competitiveness of TVEs. But the local authorities might purchase the planned materials at lower prices through the institutional link though it was illegal.

lacking of the legal system. However, the government could solve the problem using administrative resources. Local authorities were supposed to be a market guard.

Other than the protector role, local authorities also played the role of a facilitator. In a market system, the opening and closing of enterprises were subject to competition. In other words, the government did not need to regulate the market entry and exit, as the market is a self-regulating institution. Contrary to the decentralized market, China's economic system was characterized by centralization. Without a market system to adjust the number of enterprises, the government came to play a similar role, but in a less effective way. The government imposed regulations and these regulations was very detailed, extending to almost every aspect of commercial activities. Let us have a look at the following case. Hengdian was a town famous for producing silk. In 1974, people there planned to set up a factory to reel silk, and spent five months to collect all the stamps required for starting up a new business. These stamps were scattered among a number of bureaus across different levels of administration. Chen (2000) argued that, in this case, personal relationships played a relevant role. However, applications were processed within the formal institution. Hence, the efficiency of personal relationships was not comparable with that of organizations. Without the support or participation of the local authorities, normal people could not collect all the stamps they needed to set up TVEs. It was the local authorities' advantage to overcome the barrier to the market entry.

Oi raised a hypothesis that she termed "local state corporatism" to explain the success of rural industrialization. She asserted that local authorities behaved like a corporation. Thanks to the shared taxation system, they were provided with incentives to promote rural industrialization and the TVE sector. On a slightly different line of argument, Walder also regarded the local authorities as industrial firms. According to them, rural industrialization was a government-led strategy. The above analysis could be a strong support for their hypotheses. However, if they were right, the local authorities were supposed to play the same role in the urban sector supporting the development of SOEs. However, the performance of SOEs was disappointing. As such, I would like to argue the opposite. Rural industrialization was not a government-led, but a community-led strategy. The truth is that local authorities were captured by the rural communities and served the interest of communities, not vice versa. It is why Chinese local authorities tended to be the protector and promoter of the TVE sector, but did not try to prey on it. Rural industrialization performed a filtering function. Local authorities who failed to serve the interests of the community would lose influence. On one hand, local authorities had less political power after the abolishment of the command system. On the other hand, the household farming system provided an option for individual peasants to undermine the tight relationships with the local administration. Under such circumstances, only the local authorities willing to, and able to serve the community could play an active role in the economic transition. There is another similar explanation. As suggested in many cases, an individual able man took control over the administrative body and the business unit at the same time.

He could thus align the corporate interest, government interest, with the community interest.⁶¹ Only when he did so, could he maintain the high status and prestige among residents.

Market and TVEs

Although the state's role in economic growth was important, the market played a more important role. It is not controversial to state that China's economic success was achieved through the establishment of a free economic exchange system. The success of TVEs could not be imagined without the liberalization of the market. At the same time, the scope and scale of the economy expanded as the result of the fast growth of the TVE sector. However, as shown above, the market system was far from perfect during the early stage of reform. It did not feature impersonal transactions, but was embedded in the social network. We find that the social network enabled a mechanism, making market transactions possible, particularly in the case that the market had not developed an impersonal mechanism to ensure the transactions. Two functions of the social network are to be considered. First, the social network carried the information to the very end it could reach. Resources would be directed to where they generate the highest value as the market information pointed out. Actually, the presence of the social network lowered transaction costs, including information costs. As I mentioned earlier, solving of the matching problem was essential to the completion of market transactions. However, an emerging market could not afford the transaction costs arising from the matching process. The social network came to provide a useful mechanism to coordinate the matching process without imposing additional cost burdens. No matter the existence of the market, the social network, as a part of the social system, existed and would exist further. Hence, to facilitate the matching process and lower transaction costs, the market transaction was inevitably embedded in the social network.

The second function concerns the security of transactions. I have said that the local authorities could protect the interest of the trading parties. Sometimes, they also fail. A local government only had influence in the area under its jurisdiction. There were conflicts of interest among regions. They were not able to solve cross-regional conflicts. Local governments also tended to protect the indigenous enterprises. However, over-protection would infringe on the interest of the non-local enterprises. And, obviously, the rise of local protectionism would deter the growth of the market. Motivated by the enormous economic interest, the non-state-owned sector turned to the informal institution to search for a solution. The search ended up finding that social relationships could enhance people's trust within the transaction.

In a personalized exchange, the personal relationship lowered the information cost and generated trust between the trading parties. It is not controversial that the primary

⁶¹ Yin, Desheng, The Empirical Observation and Analytical interpretation of Nanjie Village Mode: A Case Study of Changing of a TVE's Ownership System, *Management World*, Issue 4, 2001, Pages 173-179

function of a personal relationship is to transmit information. If the market is small, it is not economical to throw resources into some specialized activities that facilitate information transmission. However, without information flow, market transactions are not possible. Thus, personal ties can be used as an informal way to spread information. Chen (2000) records some cases in which the TVEs sought market opportunities and the access to technologies via the social network.⁶² The personal network was a very important information source next to the local authority. It lowers transaction costs without incurring additional cost.

The second function of personal relationship is about transaction security. Through personal relationships, people knew each other better. However, sometimes an individual's action could not be predicted based on what he did in the past. Lowering of the information cost was insufficient for transaction security. I regard the personal relationship as an informal, yet self-enforcing contract. The relationship was exclusive, by which I mean that once an individual had established the relationship with another individual with respect to a specific issue, he would not establish the same relationship with others., Monogamy is an excellent example, considering the conjugal relationship. Although it is not so strict in the business world, the relationship is comparable to marriage. The exclusivity arises from the high cost of entering the relationship. If the cost of entering the relationship was low, people tended to raise the cost until it was high enough to prevent any kind of betrayal. In China, there was a famous drinking culture. People over-consume alcohol during the business dinners. They highlight their friendship and loyalty by hurting themselves through overconsumption of alcohol. The drinking culture is only a symbol, which Aoki (2001) termed a compressed feature of the institution. Behind the drinking culture is the truth that the establishment of a relationship is costly. Therefore, if people exit from a relationship, he does not only forsake the future benefit generated from the relationship, but also must afford the cost of entering into a new relationship. The self-generating high entry cost reinforces the personal relationship and thus secures the transaction.

There is a case showing the commercial value of personal relationships. During the rapid development of TVEs, an army of salesmen appeared. Over ten thousand of them were sent to every corner of the country to seek market opportunities.⁶³ Playing actively within the market, the salesmen had soon learned the true value of market information. For them, the moral incentive was gradually crowded out by the monetary incentive because they felt remote from the community. However, they were close to the market and the market value of their contribution increased enormously. In the mid-1990s, TVEs signed so-called buyer contracts with salesmen.

⁶² In these cases, the information is usually passed between relatives and residents of the same village or town. The blood tie and demographic relationship provided the foundation for developing a social network. And in that sense, the economic activities were embedded in the social relations.

⁶³ See Chao. Dingshen, 130 thousands salesmen employed by the TVEs in Ningbo area travelled all over the country to seek market opportunities, *Contemporary economy*, 2000, issue 7. It is also reported by Gongmin Bao that, in 1995, there were over ten thousands salesmen in Wenzhou area. See Bao, Gongmin, The reason why TVEs succeeded, *Sunan scientific development*, 1997.

It means that salesmen bought the commodities from the TVEs and sold them to ultimate customers. The employment contract was replaced with the purchase contract.⁶⁴ In that regard, the impersonal market took dominance over the relationship between TVEs and salesmen.

At the same time, a salesman could determine if his employer received the purchase order or not. The same case could not occur to a U.S. or European multinational firm. In an impersonal market, the clients do not pay a lot of attention to the change of salesmen. They focus only on the price and the quality of what they would purchase. Why did the salesmen have so much bargaining power? The answer lies in the relationship between the salesmen and clients. The client only trusted the salesman with whom he had established the personal relationship, but not the TVEs as an organization. As a result, talent hunting and job-hopping appeared in the group of salesmen. TVEs did it because it was worth doing so. The job market for salesmen emerged as a response to the increasing value of relationships.

6.6 The Downfall of TVEs

As discussed above, the community mobilized political and market resources to develop TVEs with the aim of improving local welfare. However, the community-led growth strategy was not stable in the long run. The TVE with a vaguely defined ownership was an efficient organizational form of production only during the development of the market. When the market expanded, the TVEs' advantage over private enterprises became smaller. Pressure did not only come from the outside competition but also from the internal tension arising from the changing of the incentive structure. During the second half of the 1990s, the number of collective TVEs decreased substantially. Most collective TVEs were privatized and it became unnecessary to differentiate between the TVE and private sectors.

There are two contrasting explanations. Some scholars argued that TVEs were “bad” and the privatization was “good”. They thought that throwing resources into the TVE sector was an interim strategy because the legitimacy of private ownership had been not totally ensured. Pan, as the representative figure of proponents of collective ownership, argued the opposite. According to him, TVEs were “good” and privatization was “bad”. He thought that the TVE was a great innovation and adaptive to China's socioeconomic system. The TVE sector was destroyed by the privatization policy implemented from the top down. The misuse of the policy resulted in the sharp decline of collective TVEs. Both of them have several right points in their arguments. I will incorporate both of arguments into a new explanation, that is, the downfall of TVEs was ascribed to the weakness of community governance as well as the changing environment, among others, the expansion of the market.

⁶⁴ The use of buyer contract is reported in an industry communication letter named Chinese TVE. See Jiang, Zhushen, The TVEs of Haimen county uses buyer contract, *Chinese TVEs*, 1995, issue 10; Cui, Yeping, The TVEs of Dafeng county uses buyer contract, *Chinese TVEs*, 1997, issue 2.

The weakness of community governance lies in the limited size of the community and the homogeneity of the members (Bowles and Gintis, 2000). In the case of a big community, such as a people's commune, the interaction among members would not be sufficiently frequent to maintain the cooperation. There is an efficient size for the community. However, the boundary of the firm is not limited. Some multinational firms have 100 thousand employees. How can the community solve the problem when the TVEs grow too big? Some villages divided the population into three categories, core residents, peasants who lived nearby, and migrant workers. From the inner to the outer circle, the private governance substituted the community governance. For the residents, Huaxi village was a community. For the migrant workers, the village was only an employer. This circle-formed system overcame the constraint imposed by the size while maintaining the community governance in the center. However, it had a fragile structure due to the contrasting logic of the two institutions.

The second weakness is the homogeneity of members. The prevalence of a collectivist culture leads to the homogeneity of community members. The ideology dominating the market for ideas must be highly unified. Taking Huaxi village as an example, the peasants were forbidden to have much entertainment. The entertainment was replaced with education to preserve the purity of the thoughts. It looked as if the whole village travelled through the time from the imperial era or the communist period into the 20th century. Putting the ethical problem aside, the closeness of the community would be a problem as the market favors diversity. In particular, the innovation is based on the diversity. TVEs may be good at imitating. However, when the imitating became less beneficial to the Chinese firms because of increasing labor costs, they were not able to turn to innovation so easily. Considering the increasing importance of innovation in the Chinese economy, the tension between population homogeneity and the diversity of thoughts might be getting greater. How we solve this problem could be essential to further development.

Moreover, from the ethical perspective, life in Huaxi village was also controversial. The major question was the lack of freedom. If lifestyle freedom was regarded as generating significant utility, the life there was not attractive, so the commentators. However, they were not the villagers who might not have many choices while throwing into the market competition. So they might prefer the higher income to the so-called lifestyle freedom. We cannot solve the ethical problem here, but shall bear in the mind that sometimes only the economic analysis could not tell us the solution to a complex problem.

We have discussed the weakness of community governance. And we will see how it led to the decline of the TVEs sector in a changing environment. By the changing environment I mean the expansion of the market. The expansion of the market reduced transaction costs.⁶⁵ In particular, the cost of using the price system was lowered. The model above predicts that, when transaction costs decreased, the private

⁶⁵ In fact, the total amount of transaction cost increased while the income to transaction cost ratio decreased.

property institution would take the dominance over the economy. As the market size kept growing, the advantage of collective TVEs over the private enterprises slowly disappeared. In the fully developed market, private enterprises have easy access to information and resources. Price is determined by the market process. Both labor and capital markets were established. Private enterprises only need to consider the market conditions they face. However, if collective TVEs want to grow, they must develop a multi-layer system and pay attention to the interests of the whole community. By contrast, private firms are able to grow without limit if the transaction cost is sufficiently low.

Second, besides the strong competition from the private sector, the sustainability of the common property institution was also challenged by the environmental change. When the impersonal market dominated the economy, TVEs with vaguely defined ownership might collapse from inside. With the expansion of the market, it became possible to estimate the market value of resources accurately. The value gap between different resources would then be widened. This had a primary effect on the labor market. In the labor market, the value of human resources was measured by prices such as wages, salaries and bonus. However, in a community, the distribution of monetary income followed the principle of egalitarianism. Contribution was reflected in the status, prestige and other kinds of acknowledgement, which provided great moral incentive. However, when the value gap between different labor was widened according to market criterion, the monetary incentive began to crowd out the moral incentive. People who could receive much higher returns in the labor market would prefer to jump to the private sector. As for the TVEs leaders, they were also tempted by the huge economic benefit from the privatization of TVEs. During that time, management buyout was a popular strategy to privatize TVEs. They would be millionaires after acquiring the majority shareholding of the TVEs. Hence, the survival of TVEs depended on how strong the moral incentive was. The practice showed that the monetary incentive was generally stronger than the moral incentive after pursuing the economic interest had been justified by the prevailing ideology of the time. Only a few villages still retained the community governance system. The prerequisite was that the leaders must play the role of a sage and have a strong preference over moral rewards. Otherwise, the charisma of the leaders would be damaged due to the corrupt behavior. In today's China, the remaining TVEs are those travelled through time from the past. They are fossils. Pan was too optimistic towards the TVEs and the community governance system. He thought that the privatization policy caused a sudden death of the TVEs and accelerate their downfall. In the well developed market, the advantage of a community governance system no longer exists. Furthermore, the increasing monetary incentive helps to disintegrate the community.

6.7 Summary and Conclusions

I spend a whole chapter to discuss the nature, the role and the development pattern of TVEs because the importance of TVEs cannot be overestimated. The experience of

the industrial countries indicates that the industrialization could only occur in the urban areas where there is high population density. Contrasting to the ordinary experience, China's industrialization was carried out in the countryside. In the cities, the state-owned sector was troubled by the incentive problem and thus contributed little to the growth. The municipalities were watched by the central authority, and so they implemented reform policies with more prudence. On top of the tight regulations, the limited access to resources made the situation of the private firms even worse. Besides, in the presence of the policy barrier, the migration to urban areas was almost not possible during that time. As a result, the relationship between urbanization and industrialization was broken down. The ratio of city inhabitants to rural inhabitants was low, and there was no sufficient labor to support the industrialization in the urban areas.

Then, unexpectedly, a spontaneous action was taken across the nation like a little fire burning the whole prairie. China turned to seek industrialization in the rural areas. The only question is whether rural entities or peasants had incentive as well as ability to pursue the industrialization. With respect to the incentive, the monetary incentive would be stronger if the profits generated from industrialization were higher than that generated from farming. The labor surplus in the agricultural sector demanded the further partition of land until the farmland was divided into small parcels. And the high labor-land ratio resulted in low efficiency. While the household responsibility system could only save the peasants from starvation, it was not a good way to accumulate wealth. If the rural community was able to implement the strategy of industrialization, they would.

However, industrialization involved high risk as I have discussed above. Underpinned by the cadre-centered network and the underlying collectivist culture, rural communities were able to coordinate the industrial production at low cost and in relatively big scale. In practice, the collective TVEs emerged and contributed largely to the growth of the TVE sector. Compared with the household-run establishments, the collective TVEs were bigger in size, had better reputation, and better access to resources and capital. The rise of collective TVEs relied on two conditions. First, the common property institution should operate smoothly with the boundary defined, the network established, the mechanisms specified and the legal position recognized. Second, the embedded market was on the early stage of development so that it required an economic institution with more coordination and mobilization capability. As shown by the practice, the common property institution performed better than the private property institution with respect to the mobilization of large-amount resources. And cadres-turned entrepreneurs, as both the center and leader of the network, steered the collective TVEs skillfully in a market being embedded in the culture and socialist system.

However, after the market had been well developed and transaction costs lowered, the common property institution began to fail. There were two reasons. One was the

increasing competition from the private sector. If the transaction cost was low, it was very easy to coordinate the industrial production in a big scale through the market. The other one was that the moral incentive was crowded out by the monetary incentive. The increasing value of labor and capital formed a strong monetary incentive, which helped to shift the labor and capital to the private sector. Furthermore, during that time, the social rhetoric was tailored to fit the free market thinking. As a result of combined effect of incentive as well as ideological shift, most of collective TVEs were privatized. And the society was ready to welcome a sharp turn to the mixed economy.

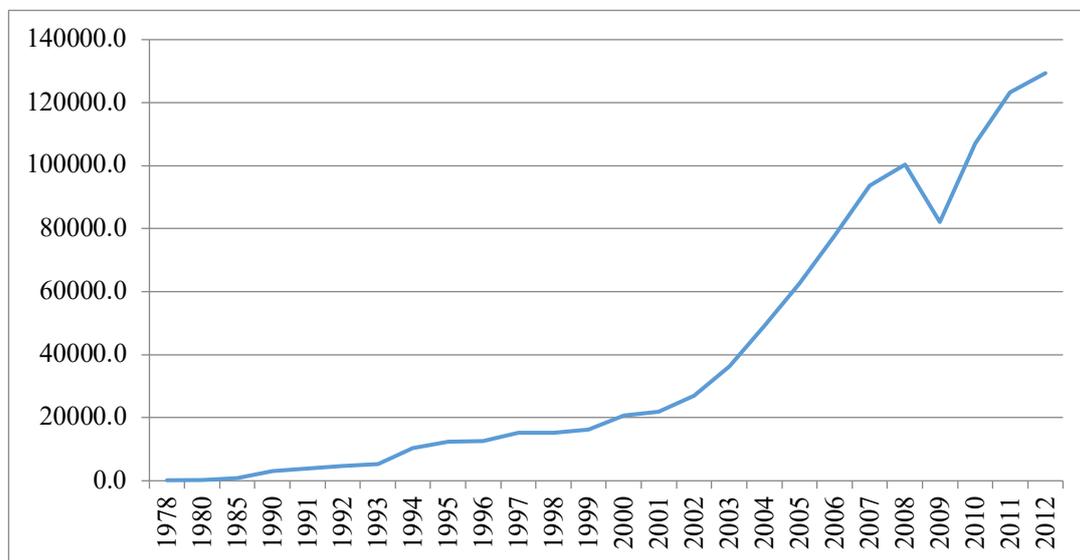
Although TVE, once a word of great success, was gradually buried into oblivion, it still means a lot to the scholars who try to understand the Chinese economy. China's economic growth could not be so fast without the contribution of TVEs. It laid the foundation for further development of the private sector as well. However, putting TVE's role in the economy aside, there is an ethical issue worth discussing. Privatization seems to be unavoidable for the market economy. We all know that private ownership provided market participants with the incentive to engage in market transactions. Among numerous market interactions emerge the prices, which direct the resources where they generate the highest value. Then the utility could be maximized. However, in this pure economic model, we could not find out the meaning of the rise and downfall of TVEs to the society. The rise of TVEs required cohesive rural communities. And the communities accumulated and preserved wealth within the rural areas. With the success of rural industrialization, the towns and villages prospered. This kind of economic growth could be regarded as inclusive growth because the distribution of income was relatively equal and all the community members shared the benefit derived from the growth.

However, the increasing monetary incentive destroyed the cohesiveness of the community. The majority of TVEs was privatized, sold, or merged if not bankrupted. With the replacement of the common property institution by the private property institution, the economic activities were dis-embedded from the rural social system. The market did not need communities anymore and was largely impersonalized. Peasants' right to share the wealth derived from industrialization was deprived. What was left to them was only the ownership of their labor and use right of land. With the decreasing importance of the community-based business, there was no reason for the peasants to stay in the villages and towns as their only concern was the level of earnings. Hence, migrant workers appeared seeking jobs in the affluent coastal areas. They were the young labor, leaving the hometown for a better earning in the cities. Liberal economists may regard it as a natural market process, similar to Louise's two-sector model. Certainly, the migrant workers earned more in the city than doing farming. But the price for the additional income was the sacrifice of a peaceful life with the family in the hometown. A series of social problems cropped up. Lacking parental care, children grew up with psychological problems. The suicide rate of elderly increased owing to the shortage of medical care. Villages and towns were

deserted. All of these negative impacts could not be priced and were not included in the cost-benefit calculation. With respect to the migrant workers, they contributed enormously to economic growth but were only rewarded with a small slice of the cake. The inequality was widened and served to solidify the social stratification.

7. The Export-led Growth, Institutional Arbitrage and Industrial Clustering

The rural industrialization prepared a good foundation for further growth. TVEs trained industrial workers, established market networks and accumulated capital. They also contributed enormously to exports. During 1995-2000, the value of exports accounted for more than 30% of TVEs' total revenue. China's comparative advantage in labor cost drove the wheel of international trade. The foreign market became a significant part of the Chinese economy. When the political barrier to international trade was removed, the potential of exports was fully released and contributed tremendously to China's industrial sector. 2001 marked the turning point as China participated in the WTO with a commitment to open its domestic market. In return, the world market also opened up for Chinese firms. Since then, China's participation in international trade stepped into a new era. Chart 7.1 shows the rapid growth of the volume of international trade.



Source: Chinese statistical yearbook

Chart 7.1 China's annual export value during 1978-2012

During the 1990s, exports were on the growth track. In the new millennium, China's entry into the WTO accelerated the growth of exports. The strong growth was interrupted by the financial crisis in 2008. During the several years following the crisis, the world economy gradually recovered. Exports re-achieved and exceeded pre-crisis levels. To put the noise aside, one thing is clear: China's exports to the world had undergone fast growth during last two decades. The rising exports contributed not only to the growth, but also changed the industrial structure. This chapter will investigate in four parts how China harnessed the exports-led growth engine. The first part tries to find out if exports were really an important source of growth. The second part is devoted to explaining how China benefited from the integration into the world economy. The term "institutional arbitrage" is used to

capture the nature of the exports-led growth. Part three draws on some findings of empirical studies to support the hypothesis. The fourth part discusses industrial clustering.

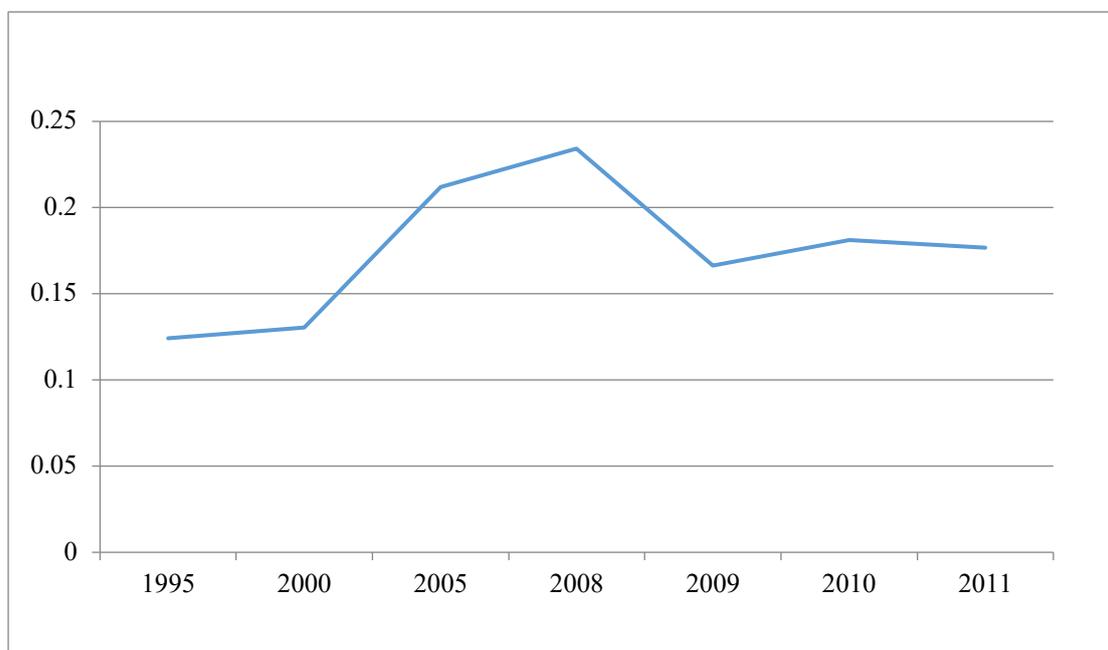
7.1 Is China Export-led?

Is China actually export-led? Scholars are polarized on the issue. Some place a high value on the role of exports and their answer is a firm “yes”. They use the ratio between the volume of international trade and GDP to measure the degree of foreign trade dependence of the Chinese economy. The ratio is much higher than the average level. For a large economy, it is abnormal. According to official data, the value of exports at its peak accounted for more than 35% of total GDP. The conclusion is obvious: Export was a major engine driving China’s growth. However, the opponents attacked the statistical terms. Anderson (2007) argued that the export/GDP ratio compares two incompatible concepts. Export is measured in total turnover and GDP in value-added terms. According to him, the contribution of export to GDP is overestimated by solely using the export/GDP ratio. It is around 10% if the revised numbers are used.⁶⁶ China’s export sector was not small. However, for the scholars sharing the similar opinion with Anderson, China’s export sector was by no means large. It only contributed moderately to the GDP growth. According to Anderson, Hong Kong, Singapore and Taiwan are export-led, but China is definitely not. However, Anderson’s argument is not absolutely persuasive. Export is not a concept in relation to the sectors or different stages of production. So it is not quite possible that the value-added at different stages of production is repeatedly counted in the value of export.

Hence, it is sufficient to use the domestic value-added in exports to show the actual contribution of the export sector to the overall growth. However, controversy persists over the estimates of domestic value-added in exports. Hummels, Ishii, and Yi (2001) developed a concept of “vertical specialization” and proposed a formula based on the concept to compute the share of domestic value-added in exports. They found that it was about 79% in 1990. Their method has been criticized for assuming the same rate of imported inputs in the processing exports and in the ordinary exports. Koopman, Wang and Wei (2012) tried to avoid the overestimation and calculated that the aggregate average share of domestic value-added in exports was about 50% before China’s entry into the WTO and had increased to 60% since then. Upward, Wang and Zhen (2013) also took the difference between processing exports and ordinary exports into account and modified the method proposed by Hummels et al. They found that the domestic content of China’s exports increased from 53% to 60% over the period from 2003 to 2006. Luo and Zhang (2014) used the OECD datasets to estimate the share of domestic contents of China’s export. According to their findings, the share of domestic contents declined from 88% in 1995 to 64% in 2006, and increased slightly

⁶⁶ Anderson, Jonathan, Is China export-led, *Asian focus*, 27 September, 2007

to 67% in 2009. The sharp decline was attributed to the increasing volume of processing exports. The OECD has a similar estimate of domestic value-added in China's gross exports. It declined from 66% in 1995 to 62% in 2000 and increased to 68% in 2008. It is assumed that a V-form of fluctuation of share of domestic value-added in gross exports over the last two decades. Hence, I used the OECD estimates to obtain the ratio of domestic value-added in exports to GDP.



Source: OECD, Chinese statistical yearbook

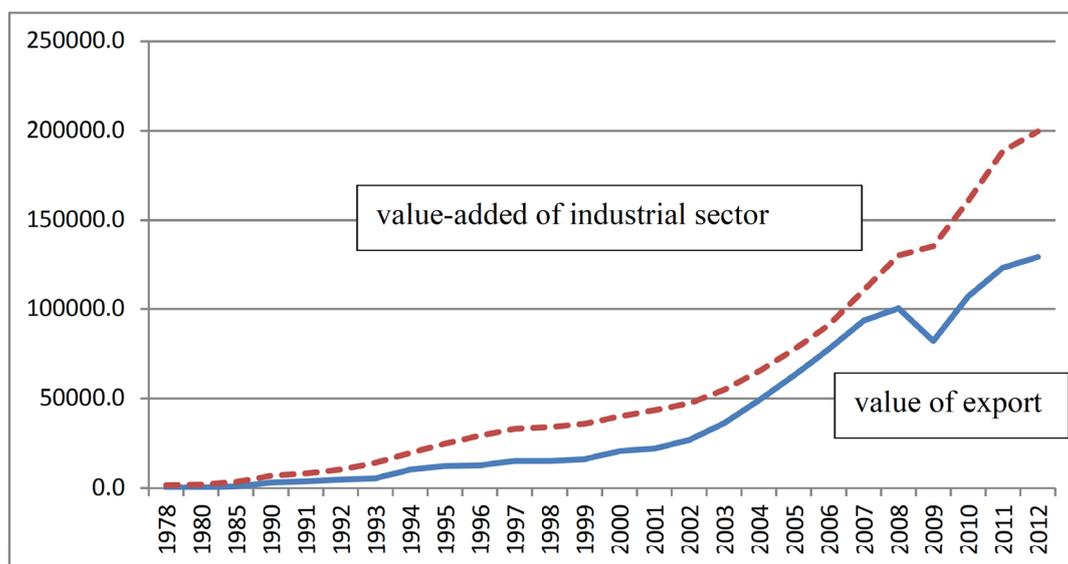
Chart 7.2 The ratio of domestic value-added in export to GDP

Chart 7.2 shows that the share of domestic content of export in the GDP started to increase in 2000, the year of China's participation in the WTO. It rose to over 20% in a few years until the financial crisis slowed down the growth of China's export. After recovering from the recession, China's dependence on export decreased. Since 2008, the domestic market has played an increasingly important role. It is no doubt that membership in the WTO led to the enormous increase of export demand as well as the rapid expansion of the manufacturing sector. Exports also contributed enormously to China's overall economic growth, particularly during the 2000s.

Over the last two decades, China was known for its overwhelming manufacturing capacity. Products labeled "Made in China" were delivered all over the world. Due to the rising export demand, the industrial sector expanded rapidly. As most of the cross-border trade occurred in the manufacturing sector, I will compare the value of exports with the value-added of the industrial sector and investigate the relationship between rising exports and the expansion of the industrial sector.

The following chart depicts the value of exports and value-added of industrial sector

since the reform. We can see that the growth trends of both variables are extremely similar. Both feature a downturn in 1998 and 1999 due to the Asian financial crisis. Then, growth speeded up after China joined the WTO in 2000, and was interrupted by the financial crisis in 2008. There might have been some other factors explaining the fluctuation of growth rate of the industrial sector, but none of them are as straightforward and pervasive as the rising exports.



Source: Chinese statistical yearbooks

Chart 7.3 Value of export and value-added of industrial sector

As shown in Chart 7.3, the full line illustrates how value of export increase from 1978 to 2012 while the dotted line shows the growth of value-added of industrial sector. Rising export demand was an external shock to the Chinese economy. As Murphy, Shleifer and Vishny (1989) showed in a seminal paper, the shift in equilibrium should be the result of the simultaneous expansion of several sectors. However, the equilibrium position also shifts outwards if a sector is expanded due to the external demand, because it triggers a demand spillover effect. The liberalization of trade resulted in the expansion of the manufacturing sector, which, in turn, generated more demand for services provided by the service sector. The initial inflow of external demand led to the expansion of both the industrial and service sectors. If the opening up policy did not end up in entry into the WTO, China would not only have suffered from a shortage of foreign currency reserves, but also a slowdown of industrialization and urbanization. If the industrial sector had not grown quickly, the service sector would not have grown quickly as well, and there would have been insufficient jobs created to transfer the surplus labor from the rural to the industrial sector.⁶⁷

⁶⁷ Hausmann, Ricardo, César A. Hidalgo, The network structure of economic output, *Journal of Economic Growth*, Vol. 16, No. 4, December 2011, Pages 309-342

As shown above, the contribution of the export sector to China's growth was more than 20% of its GDP. According to Murphy et al, the impact of exports was amplified through the demand spillover effect. So we can say that at this period China is "export-led". If we agree that exports was the second engine for the growth (the first was rural industrialization, which I have discussed earlier), we ought to question how China's manufacturing capacity is embedded in the global value chain. It seems that the answer to this question can be easily found in any of the standard textbooks. International trade takes place because of the uneven distribution of resources and differences in productivity. However, one point to explain the differences in productivity is not thoroughly discussed, yet is of interest and importance as well. I call it "institutional arbitrage". It is a major mechanism that enabled the high-speed growth of a huge economy like China's. The following section will be devoted to the discussion of "institutional arbitrage".

7.2 Trade, Integration of Market and Institutional Arbitrage

Institutional arbitrage is not a widely used concept. Scholars interested in it did not share a common understanding of the concept. Chen (2013) proposed a concept of "institutional arbitrage". He argued that "China compensates for its internal institutional deficits by leveraging the complexity of regulatory regimes across various countries, and thereby pursues its development strategy with unprecedented speed."⁶⁸ However, although the argument referred to general economic practice, his analysis focused on the capital market. Clausen (2014) studied the innovation practice of firms in Norway and argued that the "institutional arbitrage" is a source of innovation. Among those rare scholars who pay particular attention to "institutional arbitrage", Aoki (1996) and Herrmann-Pillath (2004) develop the concepts that similar to what I try to explicate in this chapter. Aoki points out that a source of benefit of trade is the international organizational diversity while Herrmann-Pillath (2004) also shows that the institutional diversity provides the basis for competitive advantages. So far the institutional arbitrage seems not to receive enough attention. Yet, without full attention from the existing scholarship, the idea of "institutional arbitrage" may provide a new perspective for development economics. I will discuss how the mechanism works and what it meant to the Chinese economy and its unprecedented growth rate.

Institutional arbitrage is only possible when two or more politically independent areas, usually different countries, interact in the economic domain. Moreover, these two countries must be very different in the institutional aspect. Through institutional arbitrage, the less developed economies benefit from the institutional resources that are formerly only accessible to the developed economies. Integration into the world

⁶⁸ Chen, Weitseng, *Institutional Arbitrage: China's Economic Power Projection and International Capital Markets*, *Columbia Journal of Asian Law*, Vol. 26, 2013

economy helped China to gain access to technological improvement and higher specialization enabled by the rule-based business pattern.

According to the endogenous growth theory, resources are directed to a special branch of the economy, usually called the R&D sector. The output of the R&D sector is the improvement of technologies, introducing additional intermediate goods in the production process. The extension of the value chain means a higher level of specialization, with one major purpose of the R&D sector being to deepen the specialization. As long as the specialization is continuously deepened, the engine for economic growth will keep running. Since the industrial revolution, the world economy has grown at an unprecedented rate because the technological improvement became, instead of the factor accumulation, the primary factor bringing economic growth. China's development pattern did not deviate from the normal configuration. The factor accumulation only accounted for part of China's economic success. The complete explanation must include the consideration of the technological aspect. Scholars suggested that low cost imitation of advanced technologies had played an essential role in China's growth. However, I will try to incorporate the institutional factors into the explanation of export-led growth.

As shown above, the improvement of technologies results in the diversification of intermediate goods and thus the extension of the value chain. It gives occasion to the transaction, as well as the coordination problem: How can the efforts to produce knowledge be evaluated, priced and rewarded in market terms? How do we coordinate the increasing specialization? These two questions are associated with two critical points determining the success of technology-driven growth. They are the commodification of knowledge and the coordination of specialization, which is significantly influenced by the institutional environments.

As to the institutional environment, a debate on the institutional aspects of trade and growth invites some discussion here. As we all know, the neoliberalism suggests a total and thorough liberalization of trade. On the opposite side, List (1930), among those who firstly come to idea of state planning for economic growth, asserts that the development policy of a specific industry should be sophisticatedly designed by the state. Chang (2002), referring to List, argues that the liberalization of trade is not what the developed countries really did in the capitalist history. In fact, the developed countries did not follow the rules and institutions that they suggest the developing countries to follow including the liberalization policy and high-level patent law.

It is assumed that the benefit of trade is conditional. For example, a strict patent law can slow down the pace of learning for the developing country. But the commodification of knowledge is necessary to create and integrate the knowledge in the products. The significant scientific discoveries may be the result of the human curiosity, ambition and honors. We also need a lot of small discoveries, inventions and technological improvement. Parker (1984) points out that one feature of the Industrial

Revolution is the massive invention activities which took place in small scales. These small innovative activities need to be incentivized. In a developed country with a rule-based business environment, the innovation is made regularly and knowledge thus accumulated. And a developing country can benefit from what this developed country achieved with respect to knowledge creation through trade. It is not to say that the developing countries should establish the institutions that the developed countries urge them to. On the contrary, the developing country can benefit from the institutional diversity across the countries via international trade.

One more question exists. Mazzucato (2013) points out that the government is behind the high-risk investment in the fundamental scientific research. Only when a big step is made in the innovation by the state, the private sector has the courage to invest in the similar areas. As the government takes the function of long term investment in the innovation, is it possible that the rise of China's manufacturing sector is ascribed to the government's investment in the technological improvement? This argument is not contradictory to the institutional arbitrage. The government is a hierarchical organization and can also be influenced by the relational culture. In a relation-based environment, the government's contribution to the general technological improvement is not very large.

The commodification of knowledge

Knowledge, as a special kind of commodity, is intangible, non-rivalrous and sometimes non-exclusive. It is intangible, so it is difficult to define the extent of the specific knowledge. Moreover, knowledge is non-rivalrous. One's occupation of knowledge does not exclude another's occupation. Thus the use and transfer of knowledge involves little marginal cost. People would be highly motivated to copy knowledge and use it freely. Except for some special knowledge known as business secrets, most knowledge is non-exclusive. It is very difficult to limit free access to knowledge. Therefore, if an economic system manages to turn knowledge into a commodity, it must solve the incentive problem and provide an enforcement mechanism as well. First, a mechanism must be developed to define the extent of the specific knowledge and assign the ownership to individuals or entities. According to Coase's exposition, the property right must be delineated to prepare for a market transaction. Second, the market mechanism must lower the transaction cost. Otherwise, the cost might outweigh the benefit. With respect to the transfer of knowledge, the major transaction cost is the cost of evaluating and pricing knowledge. Third, the contract must prescribe precisely the right to use, transfer and copy knowledge. Fourth, the contract must be enforced either by a self-enforcing collective punishment system or by a third-party punishment system, usually the state taking such function.

These four dimensions, ownership, pricing, transaction and enforcement, determine if a R&D sector emerges or not. In different institutional settings, the answer will be

different. For the impersonal market, turning knowledge into a valuable commodity involves only moderate institutional cost. First, the ownership concept is introduced to the area of knowledge through legislation. Intellectual property law is enacted to ensure individuals' or entities' entitlement to specific knowledge. Intellectual property law is not a perfect mechanism for its monopolistic power. It is also a legitimated weapon to impose barrier to the further innovation and incurs a lot of additional cost. But a moderate protection over the intellectual property is necessary because the creative activities is not costless. And once ownership is established, the pricing and transferring of knowledge becomes an important issue. Unlike the trade of physical commodities, the trade of knowledge, such as technological transfer, ownership sharing and patent licensing, is structured. So, negotiation and precise formulation of contractual terms are necessary. To that point, some professional service providers are specialized in dealing with these problems. At first glance, the specialization increases the transaction cost because a section of total labor is allocated to the service sector. In fact, it lowers the transaction cost because the cost is so high that no transaction takes place before. Besides, the enforcement issue is left to the legal system, or to the common belief in the legal system. The rule-based market system develops an entire set of mechanisms to turn the knowledge into commodities.

However, reliance on the social network undermines the incentive to produce knowledge, because the ownership system is not established, the transaction is not structured and enforcement is not ensured. As mentioned earlier, unlike physical commodities, knowledge is intangible and the content of specific knowledge is difficult to define. Thus, disputes may arise frequently due to the misunderstanding of the content of contracts. Moreover, relational contracts are mostly informal and sometimes even in oral form. There are two reasons for informal contracts. First, the low cost re-negotiation *ex post* is preferred over the precise formulation of contractual terms *ex ante*. Second, the verifiability of information is not necessary for the self-enforcement mechanism. Yet, the informal contract will be a source of dispute if the trading object is something difficult to define. Such a dispute may destroy the trade. Further, a lack of common consensus may also lead to the failure of the self-enforcement mechanism. In a petrified networked system, the collective action requires common consensus among the network participants. There is no salient institution such as the legal system to coordinate their expectations. As such, enforcement is a big problem. The unauthorized use and transfer of knowledge would neither be punished by a third party which does not exist or performs only limited function, nor by the collective punishment due to the lack of consensus. It is difficult to reach an agreement on how to define "improper action" in relation to the trade of knowledge.

In fact, knowledge is a brand new commodity in the Chinese economy. For instance, the TVEs used to improve technologies by employing professionals who had retired from SOEs. Purchase contracts of equipment and the employment contracts were used instead of the transferring of contracts or re-allocation of intellectual property rights.

Although all these contracts ensure the flow of technological factors, only the intellectual property right provides innovators with sufficient incentive because it ensures the exclusive right over knowledge. Certainly, the over-protection of intellectual property rights would lead to the so-called tragedy of “anti-commons”. The resources are underused because the owners of intellectual property right can block each other (Heller and Eisenberg, 1998). China’s case was the under-protection of intellectual property rights. By then it still suffer from the tragedy of commons. No one innovates because the rewards to innovation was not clear. Although lacking the ability to innovate, China was able to leverage the innovation-friendly regulatory regime across the developed countries.

The coordination of specialization

Apart from not being friendly to innovation, the relation-based market system also fails to coordinate the increasing specialization. In a networked environment, market participants rely on personal relationships and thereby develop a self-regulating mechanism in relation with the transaction. As mentioned in the previous chapter, Li is the first scholar who came to the difference between relation-based governance and rule-based governance. Li, Park and Li (2003) described relation-based governance as follows:

...Establishing relationships involves few fixed costs, but significant marginal costs. In relation-based governance, one needs to develop and nurture personal relations and to screen, test, and monitor every transaction partner, which could be very time-consuming. The relational information obtained by a party is implicit and individual-specific, which is neither publicly verifiable nor transferable. Therefore, the delegation of relation-based enforcement is very difficult, if not entirely impossible; that is, the head of a firm has to take care of all relations by her/himself.

As a business expands, searching and monitoring costs increase, and relations become increasingly costly. Accordingly, further relations bring diminishing returns to a manager’s effort because of the increasing marginal costs in private monitoring. This explains the Asian principle of doing business first with one’s siblings, then with one’s cousins, then with people from one’s hometown or classmates, and finally (but reluctantly) with strangers. When the market is small and it involves a small number of transaction partners, the average transaction costs could be smaller in relation-based governance than in rule-based governance, because of the substantially lower fixed costs. ⁶⁹

Wang (2009) furthered Li’s narrative argument by developing a formal model. He discussed the role of relation-based governance in the transitional economy and suggested that relation-based governance is only efficient when the size of the market

69 Though Li’s idea of relation-based and rule-based governance is interesting and full of originality, his papers are published in some less influential journals. One consequence is that only a few scholars have read the papers.

is small and the level of specialization is low.

I will draw on their arguments to explain why using personal relationships to regulate the highly specialized market is not efficient. First, according to Li, the personal relationship generates sufficient observable information to maintain the self-enforcing mechanism. However, that is the case when only a few trading parties are involved. If the value chain is extensively extended involving an increasing number of market participants, the self-enforcing mechanism may not work as well as it is in a small market. Demand for public information will increase due to the increasing difficulty in monitoring across the markets. However, the information related to the transaction is only observable to the members of trade network and is not verifiable to those outside the network. Therefore, the personal relationship is of less importance to the highly-specialized market.

The second point is related to Wang's argument. According to him, if the market is "thin", the market participants interact with the same partner recurrently across different sections of the market. For example, a landlord may interact with a tenant in the labor, financial, and commodity markets. So, it is easy to establish a tight relationship with a trading partner there is much value in the relationship. However, when the market grows bigger and the level of specialization becomes higher, the relationship is not as tight as before and thereby the value of relationship decreases. It does not make much sense to stick to the same trading partner while the market becomes "thick". Search costs decrease and search activities increase. It is difficult to maintain the personal relationship in a "thick" market characterized by a huge magnitude of interaction and specialization because the potential value of searching for a new partner is high.

We can sum up by saying that relation-based governance is efficient only when the market is "thin". Neither endogenous growth nor a "thick" market can provide an institutional environment friendly to innovation or able to coordinate the extensive specialization. Conversely, the increasing specialization that ends up in a "thick" market will undermine the importance of personal relationships. It is the limits of networked markets. Let us go back to the topic of "institutional arbitrage". If we connect the networked market with the impersonal market, what will happen to both economies, for example, China and the developed economies?

A formal model

To illustrate the implications of different institutional settings to innovation and economic growth, we need a formal model. The model should handle the issue of specialization and endogenous growth. Romer's endogenous growth model (1990) provides a good analytical framework. His model is based on the experience of developed countries. He assumed implicitly that the institutional arrangement ensures the return of the investment in creating knowledge which is non-rivalry and

non-excludable. A third party enforcement mechanism is developed to coordinate the expectations and activities of market participants. The assumption does not cause problems for the major implications of the model. According to Li's hypothesis, the marginal cost of rule-based governance is low. Thus, it will not change the fundamental structure of the model if the transaction cost is not included in the model.

Firstly, I introduce the endogenous growth model and use it as a benchmark. As shown above, it is a model describing the mechanism underlying the economic growth in a rule-based institutional environment. The functional form of the output is as follows:

$$Y(H_Y, L, x) = H_Y^\alpha L^\beta \int_0^\infty x(i)^{1-\alpha-\beta} di \quad (1)$$

The economy has two sectors. One sector focuses on producing consumer goods while the other one specializes in producing knowledge. $x(i)$ denotes various types of producer durables. Different types of durables are not perfect substitutes for each other. So, monopolistic competition exists in the market of durables. The total output is determined by four basic factors H , L , K and A . H denotes human capital, L denotes labor, K denotes physical capital, and A denotes technologies. H_Y denotes the amount of capital allocated to the manufacturing sector and H_A denotes the amount of human capital allocated to the innovation sector as human capital is allocated between these two sectors. The difference between human capital and labor is that human capital can be used for creating knowledge. The production function of knowledge is as follows:

$$\dot{A} = \delta H_A A \quad (2)$$

The allocation ratio depends on the rental rate of human capital. The final output is consumer goods. According to Romer, technological improvement results in diversification of the producer durables and thus the higher level of specialization. Further, it is assumed that η units of consumption are used to produce one unit of durables. From the symmetry in the model, it follows that all the producer durables are supplied at the same level \bar{x} , and A determines the ranges of durables. Hence, equation (1) can be formulated as $Y = H_Y^\alpha L^\beta A \bar{x}^{1-\alpha-\beta}$. Now the aggregate demand for the durables can be derived from a maximization problem:

$$\max_x \int_0^\infty H_Y^\alpha L^\beta x(i)^{1-\alpha-\beta} - p(i)x(i) di \quad (3)$$

$p(i)$ denotes the price of durables. We solve the maximization problem and have an inverse demand function:

$$p(i) = (1 - \alpha - \beta)H_Y^\alpha L^\beta x(i)^{-\alpha-\beta} \quad (4)$$

The producers of durables have already invested in the new design and expect the highest return on the investment. And there is a monopolistic competition among durables as they are not perfectly substitute. Therefore, the producers can set prices to maximize the profits and take as much as they can to cover the fixed cost.

$$\pi = \max_x (1 - \alpha - \beta)H_Y^\alpha L^\beta x(i)^{1-\alpha-\beta} - r\eta x \quad (5)$$

r denotes the interest rate. Equation (5) illustrate the profit maximization problem for the producers of durables. It is assumed that firms face constant marginal cost and constant elasticity demand curve. Solving the equation (5) results in a monopoly price, $\bar{p} = r\eta/(1 - \alpha - \beta)$. And the profit is $\pi = (\alpha + \beta) \bar{p} \bar{x}$. The profit needs to be sufficiently large to cover the cost of initial investment so that the producer is willing to invest in the innovation. It is assumed that the cost of initial investment is P_A , which is constant. And the current value of the stream of net profit should be equal to the cost of initial investment:

$$\pi(t) = r(t)P_A \quad (6)$$

Substituting the expression of π from $\pi = (\alpha + \beta) \bar{p} \bar{x}$ and equation (4) yields:

$$P_A = \frac{\alpha+\beta}{r} (1 - \alpha - \beta)H_Y^\alpha L^\beta x^{-1-\alpha-\beta} \quad (7)$$

The wage in the innovation sector is determined by the price of new design. So the wage is $P_A \delta A$. And in the equilibrium, the human capital allocated to the other sector should also be rewarded by the same wage rate:

$$w_H = P_A \delta A = \alpha H_Y^{\alpha-1} L^\beta x^{-1-\alpha-\beta} \quad (8)$$

Simplifying this equation yields:

$$H_Y = \frac{1}{\delta} \frac{\alpha}{(1-\alpha-\beta)(\alpha+\beta)} r \quad (9)$$

The growth rate is δH_A , which illustrates the increase of range of durables. Given the value of $H_A = H - H_Y$, the growth rate is:

$$g_y = \delta H_A = \delta H - \frac{\alpha}{(1-\alpha-\beta)(\alpha+\beta)} r \quad (10)$$

Equation (10) shows that the growth rate is related to the endowment of human capital, the productivity of human capital in innovation sector and the interest rate. This model is a benchmark describing the endogenous growth of an economy governed by formal rules. As Romer pointed out, monopolistic competition is introduced in the model to make the production of knowledge profitable, and a major amount of human capital is directed to the R&D sector. The key point of the model is that human capital should be used for creating knowledge instead of producing final output. In that way, immediate consumption is exchanged for a stream of net future benefit generated from improved productivity.

However, as aforementioned, relation-based governance has two problems. The first problem is that personal relationships cannot develop a well-functioning mechanism to produce knowledge. As knowledge is non-rivalrous and eventually non-excludable, it is necessary to impose external punishment to deter the improper use, appropriation of, and transfer of knowledge. If the ownership of knowledge is not enforced, the incentive to produce knowledge would be undermined. In Romer's endogenous growth model, the producer uses a new design or technology to produce a new durable and has the right to set a monopoly price because the durables are not perfectly substitutes. Although the new design or technology is not allowed to be used without permission of the producer, the knowledge embodied in the design or technology is available for everyone. So, there is a spillover effect of the knowledge. But controversy persists over this point for the owner of a new design can block the further improvement of his design, which undermines the spillover effect. It is a problem of how the intellectual property right should be defined. On the contrary, the relation-based exchange system only provides a limited mechanism to enforce the ownership of knowledge, which means that the new design might be imitated without cost. In that kind of environment, it is not possible to charge a monopoly price. If the producer faces a perfectly competitive market and is only able to charge the marginal cost, the investment in the research will not be made.

That occurs only in some extreme cases. In fact, in a relation-based exchange system, the return on investment in the research is not zero. For example, the inventor of the new design or technology takes the first mover advantage, and exploits the benefit out of the temporary control over the specific knowledge before imitation takes place. Moreover, the design or technology, particularly those which can be kept as secret, may not be perfectly imitated. So, the difference between the original design and the imitated one generates the benefit for the owner of the original design. And for the social network, the intellectual property right is also enforced to some degree because the unpermitted imitation can be punished by the owner and part of social network which see the punishment as necessary. However, as the extent and range of knowledge is difficult to define, the social network may not be function so well to support an efficient system of knowledge production. In a relational system, the markup over the marginal cost is determined by the size, tightness and complexity of social network and cannot be higher than the markup in the monopoly price due to the

limited enforcement mechanism provided in the social network. So the innovation sector indicates underinvestment for the markup over the marginal cost is not sufficient to cover the interest cost of the investment at optimum level.

Replacing the rule-based trading system with the relation-based one makes a change to the model. Equation (5) does not hold anymore as the innovators cannot charge monopoly price. Hence, equation (7) is $P_A < \frac{\alpha+\beta}{r}(1-\alpha-\beta)H_Y^\alpha L^\beta x^{-1-\alpha-\beta}$. And more human capital is allocated to the manufacturing sector with $H_Y > \frac{1}{\delta} \frac{\alpha}{(1-\alpha-\beta)(\alpha+\beta)} r$, which results in a decline in g_y with $g_y < \delta H - \frac{\alpha}{(1-\alpha-\beta)(\alpha+\beta)} r$.

This is what happens when the protection over the ownership of knowledge is not complete and the monopolistic competition among durables is limited. It may also have a side effect. For the production system, the parameter δ remains as it is. For the inventors, the expected benefit generated from the new design or technology is not as high as it is in the rule-based trading system. So it gives occasion to what I call “profit illusion”. The innovators perceive the low value of the new design or technology as if their effort was turned into output at a low rate. In other words, they contribute significantly and are only rewarded with a very narrowly defined right over the output. They only pay attention to what they may get from the innovation, but not take the increase in social welfare into account. Therefore, in their eyes, the value of δ decreases to a lower value of δ_R . With the decreasing value of δ , less incentive is provided to divert human capital to the R&D sector.

Apart from the low investment in the research, the relation-based trading system has another problem. It is difficult to use social network to coordinate the expectations and activities among the market participants from different groups, cultures, and nations. A common cultural belief is the foundation for the effective use of social networks. As such, the social network cannot be expanded from one cultural/ethnic group to another. Moreover, the expansion of a network increases the burden on the economic system. As we may recall, the marginal cost of using a relation-based governance system is high. Hence, the size of social networks should reach a maximum at some point. Certainly, a social network defined by the weak relationship can grow without limitation. But a social network with the consistent investment in individual relationship is a limited one and clusters. Considering these two features, the level of specialization also has a maximum. In the model, introducing more producer durables ends up in the expansion of the value chain. If there are limits to specialization, it is not beneficial to add more types of durables to the production line.

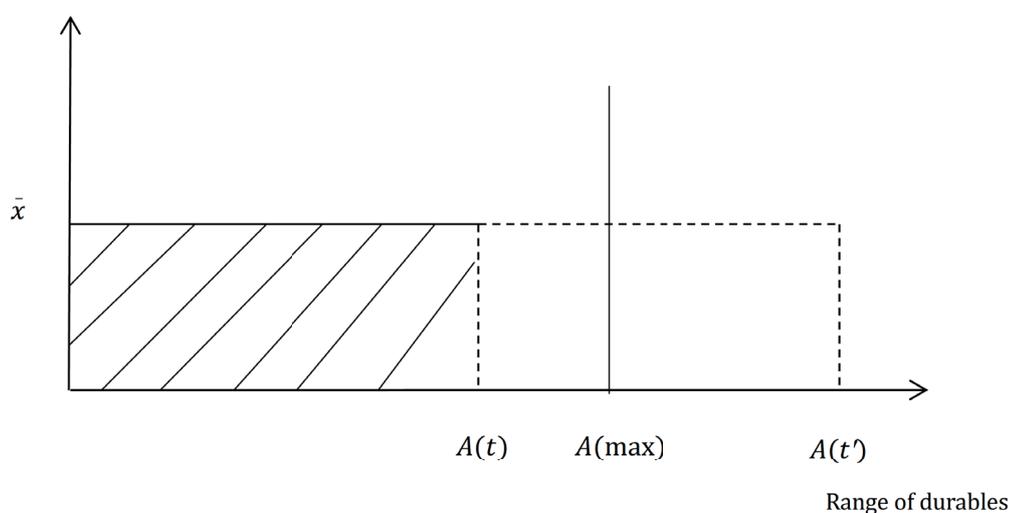


Figure 7.1 Producer durables used in production at time t and $t' > t$, and the maximum range of durables that a relation-based market can afford⁷⁰

As shown in Figure 7.1⁷⁰, the range of durables is limited by a maximum value of $A(\max)$ at a specific time point. Due to the low rate of knowledge accumulation, the convergence to A takes a longer time than it does in the original model. Furthermore, the limit to growth does not exist in the original model. The coordination of economic activities through formal rules and the third-party enforcement system incurs little marginal cost.⁷¹ Hence, the increasing range of durables is not a significant burden to the system.

After incorporating into the model the features we've discussed, the growth potential changes for the economy it models. First, the under-protection of innovation outcome leads to the distorted allocation of human capital between manufacturing sector and research sector. It is more beneficial to allocate the human capital to the manufacturing sector. Therefore, the overall growth rate is lower than that in a rule-based institutional environment. Moreover, the capacity to coordinate the specialization is measured by $A(\max)$, the maximum value of A in the modified model. Under these new conditions, the dynamic of the model unfolds as follows. At the beginning, the economy grows at a slow rate because of the under-investment in research. The relation-based governance is responsible for the under-investment because it cannot ensure a sufficient return on investment. The cut in the research funding has a wide-ranged effect and decreases the social welfare which is not taken into the calculation of innovators. Nevertheless, the economy grows continuously until $A(\max)$ is reached. Then, the economy encounters the coordination problem. Technological improvement is not possible after the capacity to coordinate the usage of various types of durables has been exhausted. However, as the factors continue to

⁷⁰ The original version of the figure is in Romer's seminal paper (1990) on endogenous technological change.

⁷¹ The network can also develop a third-party enforcement mechanism. But it works only within a specific network.

accumulate over time, the economy develops a segmented structure. The market is not as integrated as it is in the developed countries. There will be a number of sub-systems and every sub-system represents an individual social network. The networks are relatively isolated from each other. The maximum value of technological factor is A^* . The equilibrium is stable unless the resources, including human capital and labor, flows out of the network due to the external shock.

The Chinese economy pursued a similar developmental pattern in the last two thousand years. There was little reward to the creation of new knowledge. Human capital was put in the administration sector. It is not surprising that there was slow increase in total productivity. The factor accumulation accounted for the majority of the growth. Income per capita did not improve significantly as a result of the low increase in total productivity.

There is a difference if a relation-based exchange system is connected with a rule-based one. International trade ends up in the integration of the market. Now, one more choice is available for the participants of the social network. If the rule-based exchange system offers a higher wage of labor, labor in the relation-based economy will be diverted to the export sector. In the original model, the wage is defined by the following equation:

$$w_L = \beta H_Y^\alpha L^{\beta-1} A \bar{x}^{1-\alpha-\beta} \quad (11)$$

I assume that the endowment of labor is the same in the two economies. If the labor flows from the underdeveloped economy to the developed economy, equation (6) is re-formulated as follows:

$$w_L = \beta H_Y^\alpha (2L)^{\beta-1} A \bar{x}^{1-\alpha-\beta} \quad (12)$$

And the wage in the modified model is defined by the following equation:

$$w_{LR} = \beta H_{YR}^\alpha L^{\beta-1} A_R \bar{x}^{1-\alpha-\beta} \quad (13)$$

The integration of markets occurs when $w_L > w_{LR}$ holds. Comparing equations (12) and (13), there are three factors determining which wage is higher. First, human capital allocated to the manufacturing sector in equation (13), H_{YR} , is larger than that in (12), H_Y . A decrease in units of human capital lowers the marginal output of labor. Second, the massive inflow of labor into the developed economy lowers the marginal output of labor as well. These two effects prevent interaction between two economies. However, the level of technology in equation (12), A , is higher than A_R in (13), due to the accumulation of knowledge at a lower rate given the relation-based institutional environment. Further, the coordination will probably fail if the network keeps

expanding. As time passes, the technological gap keeps being widened. If the gap is sufficiently wide, the benefit of joining the global value chain can be higher than the benefit of staying in the local network.

The same applies to human capital. The rental rate of human capital in the manufacturing sector increases as the technology is improved. After a threshold point, human capital available in the less developed economy will be absorbed into the export sector because it is priced higher in the world market than in the domestic market.

Further, we need to look into the welfare implication of international trade for the developed economy. Two effects are of importance. First, for the laborers, international trade is not good news because the inflow of labor lowers the average wage rate. In practice, the U.S. companies set up factories in China and enjoyed the reduction in labor cost with domestic factories closed and the rate of unemployment increased. The second effect is that more human capital is allocated to the research sector because the units of human capital necessary for manufacturing are provided overseas. It is likely that all units of human capital will be allocated to research, thus improving the balanced growth rate. This also happens in the real world. Chinese talent is cheap and they do work that is not extremely knowledge-intensive but requires a college degree. So, U.S. talent is freed from routine jobs and focus on the innovation that is knowledge-intensive and eventually generates higher returns. Of course, the flow of factors is manipulated through price. The labor unions may act against international trade and try to impose political barriers to it. However, the owners of producer durables (we may call them capitalists) embrace the change caused by international trade because they benefit from the supply of cheap labor overseas.

For the economy governed by the personal relationship, the welfare implication is more profound. If the Chinese economy were an isolated island, the growth rate would be low and its economy would be stuck in stagnation. However, if the Chinese economy were integrated into the world economy, the growth rate would be improved and the limits to growth would be removed. Hence, a significant part of the resources are integrated in the global value chain because of the higher rate of return and employment. China's opening-up policy resulted in a grand integration of markets worldwide. Its participation in the global value chain gave rise to a new wave of growth for the world economy. The developed economies benefited from the low-cost labor and human capital, while China benefited from the advanced technologies, the diversity of durables and a higher level of specialization. The increase in productivity was shared among the participants of the global value chain, although it is achieved through the investment in research which is made exclusively overseas.

It is what I call "institutional arbitrage". The model shows that, in the presence of institutional diversity across regions and nations, resources will be directed to where

the institution is most effective for generating the highest individual return. Certainly, the mobility of factors such as labor is not perfect. The trade in consumer goods, purchase of durables, transfer of technology, establishment of branches/production sites overseas, and migration are different means to accomplish the more efficient allocation of resources. In that way, the Pareto-improvement is achieved without introducing institutional change locally. Institutional change involves high costs and complex dynamics while international trade is not a problem if the political barrier is removed. The incentive is also provided by the new trade opportunities. So, through the integration of the market, institutional resources would be more evenly distributed across countries and regions. Also, resources flow from one system to another because the latter system is more productive.

“Institutional arbitrage” minimizes the demand on local institutional resources. In the global value chain, China is responsible for the manufacturing end that involves low transaction costs and thus requires less institutional resources. Productivity increases rapidly, contributing to the majority of the growth. The rising productivity can be explained by the following four points:

- By joining the global value chain more extensive than local production chain, China’s manufacturing firms became highly specialized.
- Thanks to the access to the world market, Chinese firms could purchase and make use of various types of durables in the production process to increase productivity.
- At little expense, Chinese firms gained access to a great stock of knowledge.
- The manufacturing sector benefited from economies of scale due to the rising export demand.

The first three points demonstrate different aspects of the impact of China’s integration into the world market. Only the last point is not addressed in the model. The impact can be divided into two stages. In the first stage, wages across different countries began to converge. The income gap between the underdeveloped country and the developed country, which was denoted by $w_L - w_{LR}$, was narrowed. The rate of convergence depends on the rate of increase in labor productivity. The difference in labor productivity across countries is not ascribed to labor quality, but to the level of specialization. Integrated into the global value chain, China’s manufacturing firms became highly specialized and various producer durables were available for the production process. The increase in productivity translated into strong growth. By participating in world trade, the Chinese economy was rewarded with a piece of cake that was significantly larger than what it could have done on its own. In the second stage of the growth, China’s growth rate was supposed to slow down. This happened recently. The growth rate of the Chinese economy should be similar to or even below that of the world economy. As shown by the model, the rate of innovation (investment in research) and the stock of knowledge determine the growth rate in the long run. So, China’s growth rate is also determined by the performance of the R&D sectors

worldwide because the output of the R&D sectors is shared among all market participants due to the integration of markets.

The conclusion sounds encouraging for the Chinese economy. Without any efforts to change the institutional environment, economic growth could be achieved for a long period. However, when we consider the position of China's manufacturing sector in the global value chain, we find that it depends largely on the performance of the developed economies. Moreover, it is not only the Chinese economy that provides cheap labor and human capital. East Asia, Latin America, Africa, Russia may join the competition providing low cost labor. The exclusive right over a specific intellectual property eliminates, to a considerable degree, the possibility of substitution. However, the right over labor does not. Thus, China's bargaining power in international trade is weak and the income distributed to China is a minor part of the entire cake. If a nation does not have sufficient innovation capacity, it fails to lead the growth. Furthermore, capital owners in China are not satisfied with the return on investment. Without the ability to innovate, they are not able to acquire the monopoly rent. As long as they want to take part in the innovation, they would try to fashion an institution to enforce the exclusive right over the output of innovation. Hence, they may initiate and accelerate the process of institutional change by political as well as cultural means.

One of the key points of "institutional arbitrage" is that the catching-up country like China prefer a wide flow of information and introduce a lax intellectual property protection policy. "Institutional arbitrage" requires that two economies are governed by different institutions. If China had ever imitated what was practiced overseas, the "institutional arbitrage" would not take place. The change of policy, which is pushed by domestic big companies, tends to undermine the effect of "Institutional arbitrage". It is observed that the intellectual property protection is frequently mentioned in the official documents.

In the future, the Chinese economy will not focus merely on low-end manufacturing work, but attempt to move up in the global value chain by improving its innovation capacity. Given the incentive embedded in the high return to innovation, it is predictable that the rule-based business culture will come to influence China's economic ecosystem. Those Chinese multinational companies try to institutionalize such culture and benefit from the intellectual property protection. However, the rest of companies only want to have a moderate protection over the knowledge products. It will be a challenge for the policy-makers to balance the interest of these two groups.

7.3 Export and Increase in Productivity

In this part, I compare the model with the real economy. The major parameter we need to look into is total factor productivity (TFP). According to the neoclassical growth theory, there are two sources of growth: factor accumulation and increase in TFP. In theory, because of the diminishing marginal return and constant return to scale,

growth being driven by the factor accumulation ends up in a steady state. So, the economies converge if the factor accumulation is the only source of growth. In reality, some underdeveloped countries are catching up with the developed countries, but the income gap between other countries and developed countries has been widened. So, there must be “something else” (Easterly and Levine, 2002) accounting for the cross-countries and cross-time variation in growth. The TFP residual is thought to be this “something else”. Is technological improvement the only source of TFP growth? In a standard growth model, TFP is the rate with which the factors are converted into the outputs. Technological improvement certainly increases the TFP. There are also other possibilities. For example, due to institutional change, resources are re-allocated to improve efficiency and incentive is created for market participants. These factors receive less attention because the perfect market system is presumed implicitly in the standard model. So, we must bear in mind that China was in transition, while analyzing the TFP growth in the Chinese economy.

To the existing scholarship, controversy persists over the TFP estimates. Most scholars (Peng, 2002; Zhang and Shi, 2003; Bosworth and Collins, 2008; Perkins and Rawski, 2008) obtained TFP estimates on a gross output basis. They suggested that TFP contributes to over half of China’s overall growth. In contrast, Young’s study showed modest results. He reduced the estimate of the TFP growth rate for the non-agricultural sector during 1978-1998 to a less impressive 1.4%. Brandt and Zhu (2010) constructed a three-sector model and studied the role of labor deepening in the non-agricultural sector, which is, according to Young, the major factor contributing to the growth. They showed that transferring the labor out of the agricultural sector had a modest effect on overall growth. Also, most gains from the labor reallocation between the agricultural and non-agricultural sectors were generated during the first decade of reform.

We must admit that it is difficult to estimate the TFP growth rate. The methods, datasets and understanding of macroeconomic structure may affect the results obtained. Young focused on the non-agricultural sector, so he treated labor transfer as the labor deepening in the non-agricultural sector. However, if we estimate the overall productivity growth, the effect of labor deepening disappears. Yet, it is true that over the last three decades the growth rate was higher for the manufacturing than the service sector. So, the separation of the two sectors captures the structural features of the Chinese economy. Since the purpose is to find the relationship between rising exports and the TFP growth, it might be better to investigate firm-level data than the macroeconomic data. Brandt, Biesebroeck and Zhang (2012) obtained the estimate of TFP growth using firm-level data. Their empirical study provides an opportunity to compare between firm-level performance during the pre and post-WTO periods. As mentioned earlier, participation in the WTO resulted in rapid export growth. If a considerable increase in TFP is observed after China’s entry into the WTO, it is reasonable to associate the TFP growth with the rising export. Their finding is interesting. In 1999, the firm-level TFP growth rate averaged 2.9%. It rose to about 8%

in 2000 and declined to 2.8% again in 2001. In the period following China's entry into the WTO, the TFP growth rate averaged around 12%, rising to 14% in 2005 and declining to 11.5% in 2007. The authors named four reasons to explain the impressive performance of the manufacturing sector. First, they considered it as a "cyclical upswing following the Asian financial crisis". However, the Chinese economy was not deeply involved in the Asian financial crisis. The crisis only had a modest negative effect on China's economic growth. Second, the manufacturing sector benefited from the rising export demand. In my point of view, it is the major reason accounting for the rapid TFP growth. Third, the restructuring of SOEs and collectively-owned enterprises improved the efficiency by solving the incentive problem. However, the authors may underestimate the performance of collectively-owned TVEs. In fact, unsuccessful restructuring could lower efficiency and lead to the closing of businesses. In the second half of the 1990s, many state-owned factories were shut down and millions of employees were laid off. Fourth, liberalization and competition in the manufacturing sector was more sufficient than in the service sector. Facing free market entry and exit and intensive competition, manufacturing firms needed to maximize their productivity. It may explain the difference in TFP growth across sectors, but it cannot explain the difference in TFP growth during the pre- and post-WTO periods.

Among the four factors, China's integration into the world economy is the major factor explaining the rising growth rate of TFP over the period from 2002-2007. As shown by the model, participation in the global value chain provided access to extensive specialization and continuous technological improvement. Given the great stock of knowledge and significant investment in the research overseas as two major sources of TFP growth, the labor productivity in China's manufacturing sector increased at an extraordinary rate to narrow the wage gap between China and the developed countries.

Besides, they found one more interesting point. They compared the contribution of incumbents and net-entrants and found that "creative destruction" (Schumpeter, 1942) had a positive effect on TFP growth. Between 1998 and 2001, the continuing firms contributed to 59% of TFP growth while the net entry contributed to 41%. The contributions of the two groups exchanged positions during the period from 2001 to 2007. The net entry contributed to 62% of TFP while the continuing firms contributed to 38%. One possible explanation is that the firms entering the market in the post-WTO period were very structured so as to cope with export demand. Unlike the continuing firms, they were born to be part of the global value chain. Aware of the increasing export demand, entrepreneurs turned to seek market opportunities overseas and provided manufacturing to the world. Hence, the entrants were more integrated into the world market than the incumbents. Accordingly, their contribution to TFP growth was higher.

Now we turn to the contribution of domestic R&D to TFP growth. The domestic

investment in research, not the export, may have been the engine for productivity growth. Hence, we need to look at gross spending on the R&D as shown in the following chart.

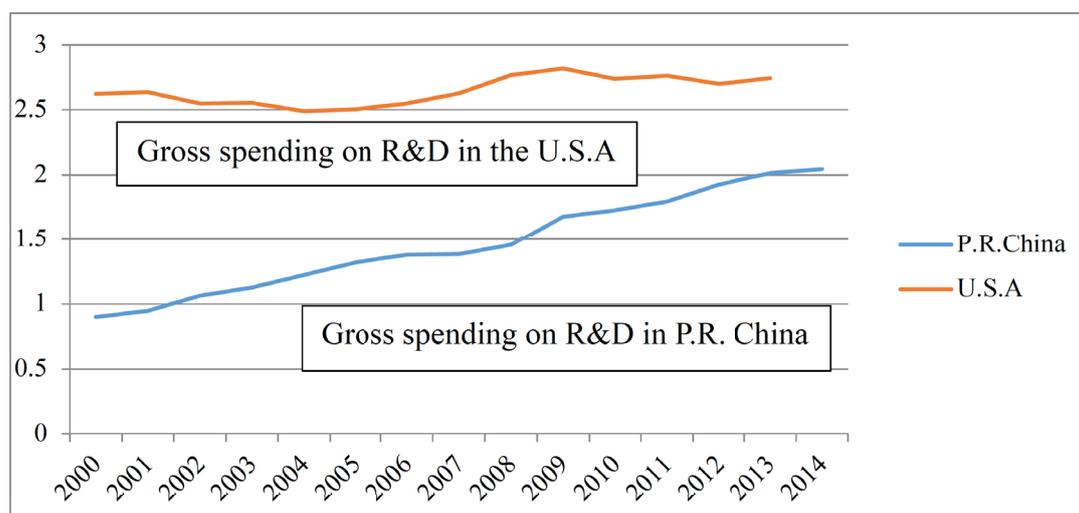


Chart 7.4 Gross spending on R&D in P.R. China and the U.S.A (Source: OECD)⁷²

In 2000, China’s spending on R&D was 0.898% of total GDP. It was significantly lower than the spending of the U.S.A., which was approximately 2.621%.⁷² Considering China’s large population, the difference in R&D spending per capita was even bigger. Low investment in R&D, combined with a low stock of knowledge, should have resulted in a low TFP growth rate. However, empirical studies argue the opposite. The truth is that productivity increased at an impressive rate between 2000 and 2007 while the investment in R&D remained low. So, the contribution of the domestic R&D sector accounted only for a minor part of TFP growth.

Despite China’s low R&D intensity, there is a trend worth paying attention to. In Figure 7.4, the gross expenditure on the R&D sector in the U.S.A. varied between 2.5% and 2.8% of GDP over the period of 2000 to 2014, indicating balanced technology-driven growth. In contrast, the gross spending on R&D in China has been increasing since the year 2000, with no end to the increase in sight. The analysis earlier predicts increasing spending on R&D. When other sources of TFP growth have been exhausted, investment in R&D would be the only option to sustain growth in the long run. Durable-owners would try to enforce exclusive rights over unique designs or technologies by making the third-party punishment system effective as well as creating a public opinion favorable to the monopoly arising from innovation. In that sense, the structure of the Chinese economy will be increasingly like that of the

⁷² As indicated by OECD, Gross domestic spending on R&D is defined as the total expenditure (current and capital) on R&D carried out by all resident companies, research institutes, university and government laboratories, etc., in a country. It includes R&D funded from abroad, but excludes domestic funds for R&D performed outside the domestic economy. This indicator is measured in million USD and as percentage of GDP

U.S.A.

Besides China's export-led growth, the relationship between trade and growth in general has also received increasing attention from the existing scholarships. Falvey, Foster and Greenaway (2002) conducted an empirical study using a sample of 5 OECD donor countries and 52 developing recipient countries. Donor country refers to the country that provides technologies while a recipient country is a country that acquires technologies. In their empirical study, they took account of whether knowledge was a public or private good and found that it did not matter whether knowledge was a public or private good in donor countries. However, the spillover effect was enhanced when knowledge was treated as a public good in recipient countries. This finding shows that the institution matters. In a relation-based trading system, knowledge is treated as a public good. As a result, the incentive to produce knowledge is underprovided. However, it reduces the cost of transfer of knowledge. Free access to knowledge is ensured. Since knowledge as a commodity is non-rivalry, the free use and transfer of knowledge maximizes its value. So, the institutional difference between China and the developed countries enhanced the international knowledge spillover effect. Knowledge was treated as a private good in developed countries due to the established IP protection regime. The IP regime provided innovators with sufficient incentive. Moreover, as a result of reallocation of resources worldwide, the human capital in the developed countries might have been freed from the manufacturing sector and thrown into the R&D sector. The rate of innovation could have been even more rapid. For the recipient countries, it was better to treat knowledge as a public good because it is non-rivalry. Fortunately, the relation-based market system is incompatible with the privatization and commodification of knowledge. Given that kind of institutional environment, China maximized the international knowledge spillover effect and generated enormous benefits from it.

7.4 Cluster-based Industrial Development Pattern

So far, we have not investigated the changing of industrial structure in the post-WTO period. One of the characteristics of industrial structure is clustering. Export-oriented firms clustered mostly in coastal areas. Gordon and McCann (2000) proposed three ideal-typical models of clusters. Table 7.1 (Yeung, Dicken and Liu, 2006) shows the characteristics of the models.

Model of clusters	Intellectual traditions	External economies accrued to firms in clusters
Pure agglomeration economies model	Neoclassical economics after Alfred Marshall	—A local pool of specialized labor (lower search costs) —Local provision of non-traded inputs (economies of scale) —Maximum flow of information and ideas (product and market knowledge)
Industrial complex model	Location theory after Alfred Weber	—Lower transport and logistics costs —Greater certainty in transactions
Social network model	Embeddedness in new economic sociology	—Localized trust and interpersonal relationships (relational assets) —Institutionalized practices, for example, conventions and norms (institutional thickness)

Source: Yeung, Dicken and Liu, 2006

Table 7.1 Three models of industrial clusters

The pure agglomeration economies model suggests three advantages of clustering. First, a local pool of specialized labor is formed to lower search cost. In China, a huge group of migrant workers appeared to move from the less developed to the coastal areas because the export sector had the huge labor demand that could only be met by an inflow of labor. The emergence of migrant workers was a response to a nationwide reallocation of labor resources. Apparently, the flow of labor was directed by the price signals. Less apparently, it was also affected by the information transmitted through the social network. Migrant workers coming from the same village tended to search for jobs in the same region, city, industrial park, or even factory. Their migration was certainly motivated by economic interest. However, their choice of destination relied largely on the information shared by the relatives or countrymen they trusted. Due to the increasing density of population in the urban areas, the local labor market was developed and search costs were lowered by the social network. It was one of the advantages that clustered firms may have taken.

Second, industrial agglomeration facilitates the local provision of non-traded inputs. Services are usually thought to be non-tradable. Clustering reduces the cost of services. However, the benefit is not critical. Third, industrial clustering enables the maximum flow of information and ideas. It is right, and I would also say that the free flow of information and knowledge prompts the industrial clustering by providing easy access to imitation. Besides, market information was shared among clustered firms to ensure that production capacity was exhausted. A reciprocal relationship was established among clustered firms. A firm transferred the purchase order to others if it could not complete the work due to its limited production capacity, with the expectation that other firms will do the same in the future. Hence, the maximum flow

of information is also one reason for clustering.⁷³

The industrial complex model focuses on the choice of location. According to the model, the advantage of clustering lies in lower transport and logistics costs, and greater certainty in transactions. This argument is not wrong, but has nothing to do with Chinese market characteristics. It is the general benefit that a firm may generate from the agglomeration. So I will not discuss it extensively here.

The social network model interests us the most. My thesis suggests that the market transaction is embedded in the social relation. Localized trust as well as institutionalized practice was essential to the rapid expansion of the manufacturing sector. At least two kinds of benefits can be generated from the “relational asset”, including better access to credit and lower transaction cost. Ruan and Zhang (2008) studied a cashmere sweater cluster in a town named Puyuan and tried to explain China’s rapid industrialization in the absence of an efficient financial system. They came to the conclusion that the industrial clustering facilitated access to capital and credits. Taking a perspective from the social network model may help us to understand their findings.

In the Puyuan cluster, self-financing and mutual financing came to substitute the underdeveloped financial system. As private firms had limited access to the formal financial system, most of their starting capital came from their founder’s savings or loans made by relatives or friends. Only a minor part of the starting capital was provided by banks. Besides the starting capital, clustered firms also demanded credits. Due to the high frequency of interactions among cluster-based firms, localized trust is formed. Therefore, the cluster-based firms were able to acquire trade credits from upstream or downstream firms. Moreover, the flexible payment alleviated the credit crunch. As reported by the authors, a considerable number of clustered firms chose to issue payment by their financial status. Debtors only paid off debts when they had sufficient capital or when creditors had urgent needs. Since the next chapter is devoted to China’s financial sector, I will come to this later.

Another feature of the social network is the lower transaction cost in the absence of well-functioning formal institutions. According to Coase, the institutional diversity is a response to the transaction cost. So, if the formal institutions fail to lower the transaction cost, the alternative arrangement emerges to substitute the formal institutions. Over the last three decades, not only the financial market was inefficient, but the legal system was also far from perfect. So, in the case of Puyuan cluster, it was observed that the oral agreement was used and most conflicts were settled out of court. It was the so-called institutionalized cooperative practice allowed by the tight social ties.

⁷³ The Silicon Valley is a good example for the benefit of clustering. See Saxenian, Annalee, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Harvard University Press, Cambridge, 1994.

These three models capture various features of industrial clustering. Among them, the social network model is particularly interesting. The social network evolves in any industrial cluster because clustering increases the interaction opportunity for cluster-based firms. If the well-developed formal institutions are available to the clusters, the social network may be solely used for channeling information. Yet, in the absence of the formal institution, the best practice implemented through social networks is institutionalized to underpin the rapid expansion of the manufacturing sector. In the real economy, the feature of China's agricultural culture was amplified through the clustering. In turn, the industrial clustering was increasingly beneficial for the cluster-based firms.

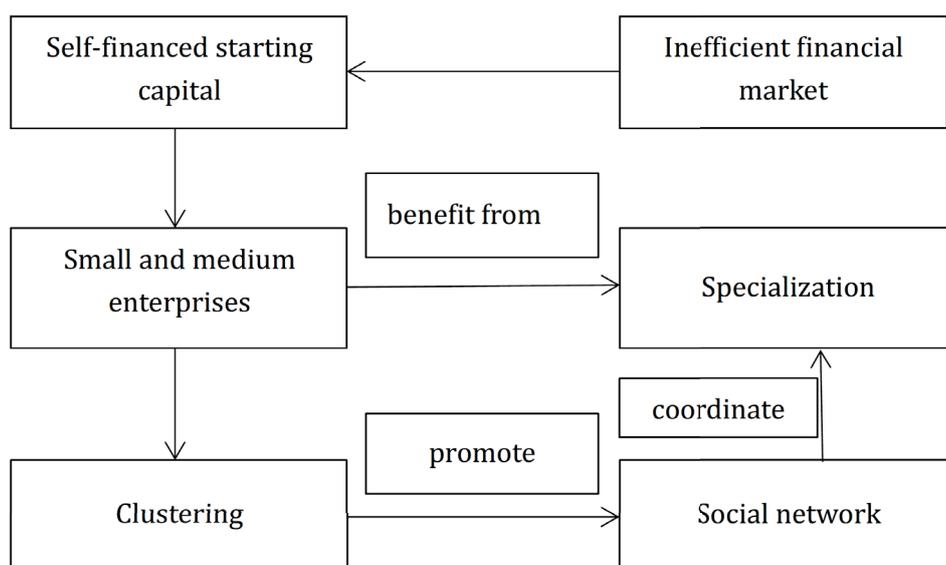


Figure 7.2 Why and how an industrial cluster emerges

In that sense, clustering was a strategy appropriate for China's manufacturing sector. Figure 7.2 summarizes why and how an industrial cluster emerges. First, it was impossible to integrate the production line into several large firms without a well-developed financial market. Instead, in the Puyuan cluster, numerous small and medium firms were founded and engaged in the specialized production activities. The specialization and collaboration through the market, not the vertical integration, characterized the structure of the industrial sector. Yet, the transaction cost incurred by using the market to coordinate the specialization had been a challenge to the cluster. To lower the transaction cost, the cooperative practice was institutionalized through the social network. And clustering facilitated the establishment of a social network.

In fact, market has a network structure. And small world property of network make the long distance communication possible. But the quality of communication is subject to the distortion. It is to say that the communication between A and his friend B has a better quality than between A and C who is the friend of B. The diminishing quality of communication may not be able to support the long distance transaction. However, the government, as an intermediary of credit, can do something to facilitate

such long distance communication and unleash the potential of network structure of market. Actually, the Chinese government cares for the industrial parks in the urban planning and finance it with fiscal revenues. In doing so, a platform is provided for the emerging network structure. And the communication among different industrial parks across the regions is also encourage through policies. Thus the long distance communication is reinforced and make the entire system more networked than it was without the government policies.

7.5 Summary and Implications for Further Studies

China's development came from two sources. The first is the liberalization of the market. On one hand, the efficiency of resource allocation has been improved. On the other, incentive were created for market participants. The second source is China's integration into the world economy, which is known as the "opening up policy". During the early stage of reform, the Chinese economy was a quasi-autarky economy. After a long period of isolation from the rest of the world, the re-connection with the world economy was slow at the beginning. Thus, the main source of growth was the economic reform. However, the benefit of reform would be exhausted in a short time, though the benefit was enormous. So, China had to find another growth engine. Its entry into WTO marked a turning point. Due to the rising export demand, the manufacturing sector experienced rapid expansion. The interaction between the two economies governed by different institutions enabled "institutional arbitrage". China's relation-based trading system did not do well at stimulating innovation as well as coordinating the production in a big scale and wide range. It implies that China was not able to maintain economic growth over the long run while remaining an autarky. However, through joining in the worldwide division of labor, China enjoyed access to a large stock of knowledge and continuous technological improvement. China leveraged the rule-based governance institution across the developed economies that took part in global value chain as well. It is what I call "institutional arbitrage". As the evidence, despite the low gross spending on R&D, the firm-level TFP growth rate increased significantly during the post-WTO period. The last part of the chapter was devoted to the industrial structure. Clustering was a structural feature of the manufacturing sector. In the absence of well-developed formal institution, clustering helped to form localized trust and institutionalized the cooperative practice to lower the transaction cost incurred by coordination of specialized production activities.

The analysis of export-driven growth has an important policy implication. One of the biggest questions that economics deals with is what Adam Smith called "wealth of nations". Why are some countries wealthier and others poorer? Development and growth are always the hot topic of economics. Development economics suggest that industrialization and urbanization are effective means to promote growth. Institutional economics emphasizes the importance of the well-developed institution for growth. Some growth theorists prefer a high savings rate and some assert that policy should be developed and implemented to improve spending on R&D. In fact, participating in the

world economy might be the best strategic choice for an underdeveloped country. There are two reasons. It is not very costly to implement an opening up policy and its effect is highly predictable. On the contrary, fashioning a new institution or subsidizing the scientific research is costly and the effect of policy may be not as expected. Second, the opening-up policy has an immediate effect on growth. Other policies may take years to see if they work or not. Given the local institutional resources dealing with the coordination of production and transaction, a developing country should participate actively in the international trade and benefit not only from the technology and management spillover but also the institutional spillover by leveraging the advantage of the rule of law institution. This mixed economy supported by the two different institutional settings can thus grow at a considerable rate.

Despite the great advantage of an export-oriented strategy, risks are also generated in the long run. In underdeveloped countries, their innovation capacity cannot be fully developed. As aforementioned, innovation-based monopoly is a risk-dominant strategy. Thus, the underdeveloped countries that focus on the manufacturing works occupy the positions at the low-end of the global value chain and have less bargaining power in the trade. It may further affect the landscape of political power across nations. Nevertheless, the opening-up policy is very effective in promoting growth, with the role of export to improve the growth potential of underdeveloped countries clearly deserving of more studies.

So far we know that the export-driven strategy is good to growth. But how can a less developed country go that way? What the government has to do is to protect the emerging export sector which comprises numerous small establishments and thus make it vital and the growth sustainable. The aim of policy is to avoid the monopolization of market and make the information flow not be subject to the limited access to the innovation sources. Therefore, the government should be capable of distributing power to different classes and balance their interests. In that case, the policy is not influenced by the class interest and purely growth-oriented to make sure no business entities can change the policy to serve its purpose of monopolization. Otherwise, the flow of information and resources would be limited and export-driven strategy would be turned into a rent-generator for some oligarchs. So, besides the economic and institutional conditions, the government policy is also essential to the export-driven growth. As long as some less developed countries choose to follow the export strategy, they should also pay attention to the power structure and make sure that the flow of information and resources is not affected by the existing power structure.

8. Chinese Financial System: A Tale of Two Sectors

The Chinese financial system may remind people of Kafka's novel titled "The Castle". People heard of the castle, talked about it, but never approached it. The formal financial system in China is a castle. I have mentioned that some private TVEs have red caps in order to approach the castle. For the private firms, the castle is mysterious and charming. However, they have no access to it. Personal relation may offer some opportunities but not maintain a tight cooperation between formal financial intermediaries and the private sector. Besides indirect finance, the stock and bond markets have also been established to meet the increasing financial demand. However, it is only a drop of water in the ocean. As reported by the People's Bank of China (PBC), direct finance only accounts for 20% of the financial market. Hence, the performance of the financial intermediary, among others the banks, should be responsible for the efficacy of the financial system.

The formal banking system was a part of the state-owned economy. The bank is owned or controlled by the state, and the financial market is heavily regulated. The state-owned bank is not a profit-maximizing entity but pursues political ends. It is conservative towards credit risk and tends to lend to the state-owned enterprises endorsed by the government. In Chinese folk speech, they all eat from a common bowl. So, the bank is free from the risk of dead loans. The risk that should be borne by individual banks is turned into a systemic one for the state-owned sector. It is not whether the bank can survive, but if the system can survive or collapse as a whole.

If the formal financial intermediaries cannot meet the large demand of the private sector, an informal financial system will emerge. The word "informal" shows that this kind of financial activities is underground and sometimes illegal. More precisely, it is in a gray zone, neither permitted nor prohibited by the state, and can hardly be discovered, tracked, or regulated. It relies significantly on the social network and contributes enormously to the rapid expansion of the private sector. The underground financial system is a spontaneous order that emerged due to the absence of financial support in the private sector. Besides the contribution it made, the risk it introduced is also worth looking into.

This chapter is divided into three parts. First, I will introduce the formal banking system in China and explain why it fails to serve the private sector. The systematic risk underlying this system will also be discussed. The second part is devoted to the informal financial market in China. The culture, network, and relationships are supposed to be essential to the well-functioning of an informal financial market. I will also look into the risk it brings to the economy. In the third part, I will discuss the cross-guarantee system which enables the social network to gain access to the formal financial institutions. The last part concludes and makes predictions. The informal financial system merits further study and will deepen our understanding of how to facilitate financial transactions in a developing economy.

8.1 China's Banking System: Reform and Risk

1949 marked a turning point for China's financial system. Before 1949, it was shaped mainly by the market competition. After 1949, commercial interest was replaced by political ends. The financial sector was nationalized as well as centralized. Shortly after China turned state-socialist, through the confiscation of private banks, the financial sector became integrated into the central planning system. Between 1949 and 1978, the People's Bank of China (PBC) was the only existing financial institution and controlled 93% of total financial assets in the country (Franklin, Qian and Qian, 2008). Essentially, China learned from Soviet model and brought the centralization to an extreme. This also happened in the financial sector. The PBC was responsible for the ordinary work of a central bank and the business of a commercial bank as well. On one hand, it issued currency and pursued the balance between macroeconomic stability and growth. On the other hand, it took savings and loaned to the firms. The PBC was subordinated to the Treasury Department and was set up to distribute the liquidity among the sectors and factories. It adjusted and distributed the liquidity to fulfill the need of the central plan. Ironically, the central planning system did not need any liquidity in the ideal situation. In socialist China, money was almost useless because the supply was rationed. Instead of money, coupons were used to distribute consumer goods. For example, there was the rice coupon for consumption of rice, and the oil coupon for consumption of oil.

After the reform took place in 1978, reformation of the financial sector was also on the agenda but was not accomplished with a big bang. The PBC was disconnected with the Treasury Department and gained independence in 1979. Independence was necessary for the liberalization of the financial sector. Moreover, it was also necessary to separate the commercial banking division from the macroeconomic policy-related division of the PBC. In practice, four state-owned commercial banks were set up to take over the commercial banking division from the PBC. The Bank of China (BOC) was in charge of all the foreign-related business. The China Construction Bank (CCB) focused on financing investment in infrastructure and manufacturing sector. The Agricultural Bank of China (ABC) provided commercial banking services to the rural sector. The China Industrial and Commercial Bank (ICBC) was the latest and biggest one among the "big four". After the first stage of financial reform, a dual banking system was established. The commercial banking division was separated from the central bank so that commercial interest could not influence monetary policy and disturb macroeconomic stability.

After the dual banking system was established, the financial sector was continuously expanded. More financial institutions were formed. Economic growth was not balanced across the vast lands of China. To meet the specific demand for financial services, local governments were allowed to found regional banks. They were smaller, more flexible, and mainly handled local financial issues. At the same time, tiny financial entities such as rural credit cooperatives and urban credit cooperatives were

also founded. In doing so, the financial system was expanded to be a network of financial intermediaries ranging from the “big four” to numerous tiny entities, accessing almost every corner of the country.

The non-bank financial institution was also formed and it performs similar financial functions. It was supposed to play a supplementary role to the banking system. The stock market was opened first in Shenzhen, then in Shanghai for public exchange of stocks. This event was thought to be exciting. However, as mentioned earlier, the stock market was only a secondary way to create liquidity. It could neither be compared with the formal banking system nor with the informal financial system. So, I will not investigate direct finance here. Liberalization of the financial sector involved more than one dimension. Allowing the founding of various types of banks was only the first stage of reform. However, all the banks were owned or at least controlled by the state. Hence, the further reform put an attack on the ownership structure. In 1996, the first private bank, Minsheng Bank, was established. About 85% of shares of Minsheng Bank were owned by private firms. Minsheng Bank was merely a trial program. Indeed, the liberalization reform proceeded slowly. It took decades to finish the last one-mile of the reform. In 2014, five private banks were formed. This was the first time that the state exited control over an individual bank. The financial sector was a less developed sector in the national economy and needed a fundamental reform towards market liberalization.

Besides, liberalization of the financial sector for foreign capital was also an important issue. Not surprisingly, China’s participation in the WTO accelerated the liberalization of the financial sector. Although the barriers to entry were not removed all at once, a breach was created. At that time, there were three kinds of restrictions imposed on the foreign-invested banks, namely the geographical restriction, the restriction on customers, and the restriction on businesses. Step-by-step, China fulfilled the commitment to open the market, and abolished most of the restrictions. So, the foreign-invested banks almost achieved national treatment. It is predictable that in the near future, the boundary between the foreign and domestic banks will merit no attention.

China’s banking system has experienced a transformation from a unitary system to a market-based one in three stages. In the first stage, the function of commercial banking was separated from the central bank. A dual banking system was established. In the second stage, the financial market was liberalized for private capital. As a result, the financial market became governed by commercial rules. Governmental control was not carried out in a direct way. In the third stage, instead of direct interference, the government drew the bottom-line for financial activities. The financial supervision institution was set up to monitor the improper practice of financial institutions. In general, external supervision replaced internal control. As shown by the practice so far, China’s financial system has been restructured to be compatible with the market order. However, “big four” is still the superpower in the Chinese financial market. This

means that the government still controls a significant share of the market. This has brought, is bringing, and will bring severe problems if the reform cannot change it. We will discuss it in the following part. It is worth mentioning that this chapter do not deal with currency issues of the RMB though it is a top interesting theme. Here we focus on the financial system itself.

The Weakness of the Formal Financial System

There are two kinds of risk inherent in China's banking system. The first kind arises due to the coexistence of the state-owned and private sectors, though the heterogeneity also brings resilience to the system, while the second arises due to the coexistence of rule-based and relation-based governance. It is possible that systematic risk evolves into a financial crisis. If not, it could also deter economic growth.

Chinese banks discriminate between the state-owned and private sectors. The loans made to private firms are extremely small compared with that made to SOEs (Gregory, Tenev and Wagle, 2000). Some scholars (Brandt and Zhu, 2000) argued that the discrimination reflects government policies to transfer resources from the private to the state-owned sector. In my opinion, the discrimination was not intended by the government, but a natural response to the existing institutional link and the requirement of risk control.

First, the state-owned banks (SOBs) were not incentivized. Indeed, they paid more attention to risk control than the profit rate. Directors of SOBs could not be better off for raising revenues, but would get into a dangerous position if they failed to show an effort to minimize risk. Besides, interest rates as well as transaction fees were controlled. It was a kind of price control that discouraged profit-maximizing activities. Even if the banks tended to maximize profits, their strategy was significantly limited by the regulations. So, we must bear in the mind that profit maximization was replaced by risk minimization as the primary goal for the financial institutions. Hence, Chinese banks liked big firms because they were too big to fail. First, it was less difficult for big firms to meet the collateral requirement. Collateral provided the information on repaying ability and insurance. Second, some SOEs monopolized the market due to entry barriers imposed by governmental policy. Without competitors, SOEs were capable of making big profits. So, their ability to repay the loans could also be ensured. Furthermore, the biggest shareholder of SOEs was the government. Thus, the repaying ability of SOEs was associated with fiscal revenue. The loans borrowed by SOEs could be considered a kind of government-backed loan. Chinese banks believed that the government would not be neutral to the bankruptcy of SOEs. Kornai (1986) proposed a term for it - "the soft budget constraint". The explicit soft budget disappeared after the restructuring of SOEs, but the implicit soft budget still existed as long as the institutional link between SOEs and the government existed.

On the contrary, private firms did not have any advantage in winning the trust of

banks. They were small and unable to meet the collateral requirement due to the lack of assets. Further, the institutional link between private firms and the government was weak. The budget was “hard” for them. So, they faced stricter examination by banks before they could receive loans. Many loan applications were turned down due to the overestimated risk. Moreover, it was less profitable for banks to serve the small and medium enterprises. Xu (2001) reported that the borrowing frequency of SMEs was five times as much as that of big companies. However, the amount an individual SME borrows was much less than the loans borrowed by a big company. Xu estimated that the information and management costs caused by serving SMEs were 5-8 times as much as those caused by serving big companies.

Moreover, the state-owned and private sectors face different institutional environments. The institutional gap also creates a barrier to access to the financial system for private firms. Information needed for loan lending decisions can be acquired through the inner-sector channel. So, SOBs can acquire the information of SOEs, but have no access to the information of private firms, particularly when the private firms have an incentive to lie to the banks. During the early stage of market reform, most market information was transmitted via personal relationships in the private sector, which was only observable to the insiders, but not verifiable to the outsiders such as financial intermediaries. For example, the existence of oral agreements was only known to the trading parties. Banks were not able to find out if a private firm actually had as much business as it claimed. Due to the distinctive information sources, it was very difficult to form mutual trust between SOBs and private firms. Moreover, communication between banks and private firms could also involve problems. As for the state-owned sector, information was expressed by SOEs in the way that could be understood by SOBs. However, the private sector was familiar with another rhetoric system. Some consulting firms were set up to bridge the financial demand of private firms and the supply of banks. They found that for the private firms, the key factor to show repaying ability was the size of its social network. The owner of a factory would tell the bank that he was in a good relationship with many other entrepreneurs. However, the bank could not find any relationship between the social network and repayment ability. They wanted to know the cash flow and profit rate and might not have noticed the role of the social network in securing the loan. SOBs knew formal business rules and were not familiar with informal practices. Communication failure also exacerbated bias in credit policy. In sum, due to the institutional gap, the private firms have limited access to the formal financial market.

As a result, most of the liquidity produced by the banking system is sold to the state-owned sector. But the risk is underestimated for financial transactions. Instead of profit rate and cash flow, the institutional link is considered the most critical factor for risk control. Under this circumstance, the soft budget is further softened due to the underestimated risk. As it was not difficult to get loans, SOEs made easy investment decisions and expanded production blindly. It is fine when the economy is improving. However, when demand becomes insufficient compared with production capacity,

SOEs cannot receive the expected return on the investment which is mainly financed through bank loans. Hence, SOEs are not able to repay the loans. The whole system is vulnerable to such a crisis. This problem cannot be solved as long as the institutional link between financial institutions and production entities exists. Ironically, risk control resulted in the creation of a huge number of non-performing loans (NPLs).

As evidence, China's NPLs are much bigger than that of other countries (Allen, Qian and Qian, 2005). Official data shows that China's NPLs increased rapidly from 1999 to 2001. Particularly in 2000, it was as high as 22.5% of total GDP. The NPLs of the USA were only about 1% of GDP. Interestingly, Japan and Taiwan's NDLs were also high during 1999-2002, reaching about 12% and 10% of GDP respectively. The high rate of NPLs was a result of the Asian financial crisis, which is supposed to be caused by the informal relationships between banks and firms.

The problem of NPLs was not as severe as the figures suggest because the Chinese economy had undergone strong growth. With the increasing fiscal revenue, the government could assume the NPLs created by SOBs. So, the NPLs were not the major damage that the financial system did to the economy. The inefficiency of the financial system is not only reflected in the poor lending decisions made by SOBs but also in the crowding out effect on private investments. The private sector was the engine of the growth. However, private firms could not get bank loans when they needed liquidity. On the contrary, the state-owned sector, not lacking in liquidity, could still have bank loans to invest in various projects that could be done more efficiently by private firms. Lacking a liquidity redistribution system, the efficiency of the production and exchange in the private sector would be severely affected. But the story did not end here. As a response to the limited access to the financial market, the private sector developed an informal financial system. In that sense, China's financial system features a dualism of the formal and informal sides.

8.2 China's Informal Financial System: The Differential Mode of Association

Given the importance of the informal financial system, in this section, I will discuss the underlying mechanism to shed some light on the characteristics of the Chinese financial system. As mentioned, China's formal financial sector preferred to lend to SOEs. This strategy had put the private sector in a disadvantaged place. Without the support of a well-developed financial system, private firms would have difficulties in obtaining lending. Therefore, the private sector developed some adaptive patterns to create liquidity that could be distributed among private firms. Innovation and experimentation resulted in the emergence of a private lending system. The private lending market is huge in China. The Survey and Research Center for China Household Finance at the Southwestern University of Finance and Economics (2014) estimated that the amount of private lending was 5,280 billion Yuan in 2013. 22.3% of Chinese households borrowed loans through informal channels. 14.8% of them were interest-bearing loans. Among them, 750 billion Yuan were loans with high interest

rates. The average annual interest rate was 36.7%, significantly higher than that of the banks. The estimates may not be accurate due to the difficulty in collecting data from the household lending market. Much of the lending had been done among relatives and friends. Data was not available in detail because such informal lending had not been documented. So, the size of the private lending market was eventually underestimated. Even so, the size reported cannot be considered small. Loans made by banks were about 8,900 billion Yuan. The size of the private lending market was about 60% of the formal financial market.

Although the size of the two markets is similar, the mechanism governing financial transactions is totally different. Given the great uncertainty embedded in financial transactions, it is extremely important for a financial intermediary to assess the repaying ability of individual firms and to ensure the security of financial transactions. In an impersonal market, the enforcement of contracts is outsourced to the legal institutions. Further, the risk control is accomplished through market mechanisms like interest rate markup, collateral requirement, external audit and other approaches.

However, the informal financial system has limited access to the institutional resources available in the formal system. So, it must seek its own way to handle the issues of risk control and contract enforcement. In the underground economy, two means are of importance. They are the social network and interest rates. The social network, as a network of peer-to-peer relationships, provides the information channels and help to enforce financial contracts. In general, social networks lower transaction costs and thus decrease the risk arising from high transaction costs. Interest rates are another tool. As we know, the interest rate is the price determining the demand and supply of loans. According to Fisher, interest appears due to the impatience to consume and the opportunity cost to invest. The opportunity cost of lending is the utility generated from immediate consumption or the forgone income generated from other opportunities of investment. Hence, interest is demanded to compensate the opportunity cost. But the real world is full of risks. And the calculation of interest rate should also take the risk into account. In the Chinese economy, the interest rate is controlled for the banks. The Chinese financial laws provided that the interest rate in the private lending sector was only allowed to be four times as much as that charged by banks. Recently, the limit is relaxed and the maximum interest rate allowed is 36%. Yet, in the informal financial market, the contract is enforced by the long-term cooperation enabled by the social network. So, the informal financial market is more liberalized to address the demand involving high risks and urgent needs. In sum, social networks and interest rates are complementary tools to keep the informal financial market working.

It is widely agreed (Karlan, 2007; Ghatak, 1999; Mordach and Karlan, 2011; Bastelaer, 2000; Yang, Chen and Zhu, 2011) that social networks play an important role in establishing and maintaining order in the informal financial market. Yet, to deepen the understanding of the mechanism underlying the informal sector, we must

take the structure of Chinese social networks into account. So, I will incorporate both the general function of social networks and Chinese characteristics into the model. In the previous chapter, I mentioned that the Chinese-style network of relationships is characterized by “differential mode of association”. It refers to a relational system in which the closeness of relationships is determined by the frequency of interactions. I interpret it in this way because biological and geographical ties provide more interaction opportunities for individuals. Such interaction produces the information available for future interaction. After many interactions, trust is gradually formed on the basis of perfect information and reinforces the relationship. However, an individual’s time and competitive capacity is limited. Individuals cannot develop numerous relationships with equal quality. So, blood and geographical ties, similar cultural backgrounds, similar tastes or world views are probably the focal points in telling a person which relationship is worth the investment. The emphasis on the family and community in Chinese traditional culture helps to form the “differential mode of association”. It can be compared with a system of concentric circles. At the core, there are the family and relatives. They have the closest relationship, and usually pool income or lend money to each other without requiring interest. In the middle, there are friends and countrymen. A low interest rate is demanded for them to lend to each other. In the outer space of the circle, there are acquaintances and friends of friends. The relationship is of the kind “I know you but do not trust you”. So, a high interest rate is required to compensate the risk.

I will discuss this circle-formed financial system using a simple model. I assume that the interest rate is \bar{r} . \bar{r} is the real interest rate not disturbed by monetary fluctuation. In the informal financial market, \bar{r} is free to choose. It implies that the maximum interest rate provided by law is invalid for the private lending sector. Then, we take the risk into account and have the following equation:

$$(1 + \bar{r})L = \rho * 0 + (1 - \rho)(1 + r)L \quad (1)$$

This is an equation describing the lending decision. L denotes the amount of loans. \bar{r} denotes the interest rate free from risk. r denotes the interest rate affected by risk. ρ is the parameter of risk measuring the probability of NPLs. The individual receives $(1 + \bar{r})L$ if he uses the monetary asset in a safe way and generates the interest in a risk-free business, for example, putting the money in a deposit account. In contrast, if the individual lends in a financial market full of risk, the loan will not be repaid with probability ρ . To compensate the risk, he requires a higher interest rate r . So, with probability $1 - \rho$, he receives $(1 + r)L$. Only when the risk can be compensated by the higher interest rate, would the individual decide to lend. The equation (1) can be transformed as follows:

$$r = (\bar{r} + \rho)/(1 - \rho) \quad (2)$$

This equation shows the calculation of interest rate in an environment full of risk. The

relationship between risk and interest rate is demonstrated in figure 8.1.⁷⁴

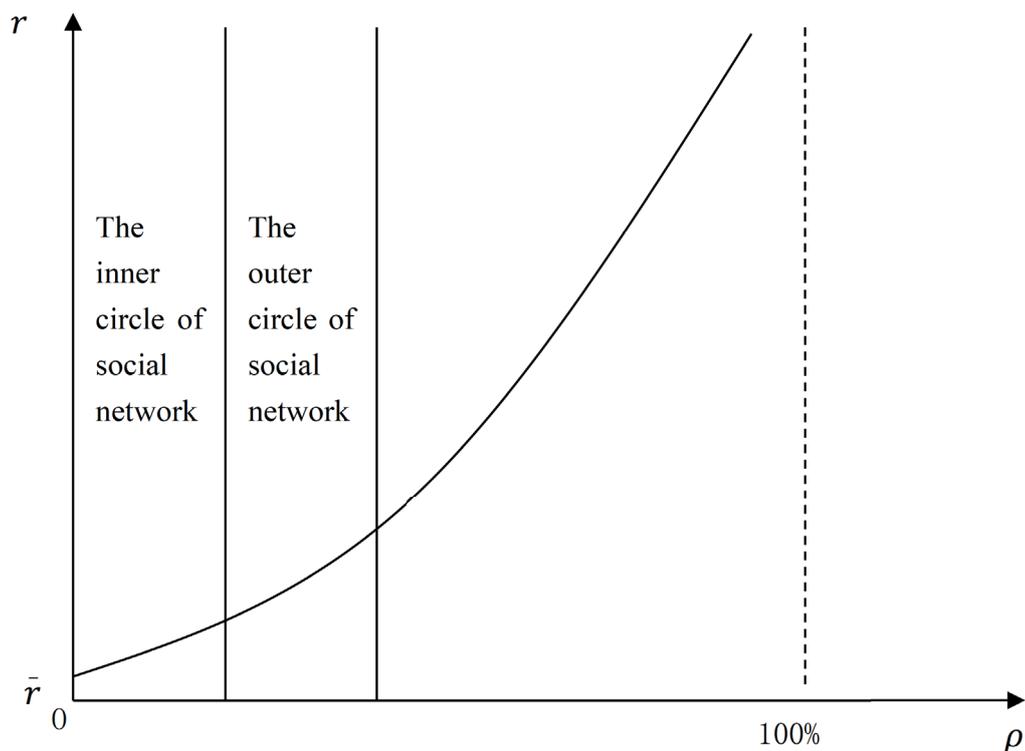


Figure 8.1 The relationship between risk and interest rate⁷⁴

The Inner Circle of Social Network: Private Lending

In the center of the circle-formed social network, there are the tightest personal relationships such as family. The pooling of family income suggests that a family is a basic unit of financial intermediary. It is because the family-level relationship minimizes the transaction cost of liquidity distribution. Certainly, the relationship among relatives and friends also decreases the risk associated with financial transactions. In general, social networks affect risk as well as transaction cost in four ways. First, social networks help to provide information necessary for assessing the repaying ability of the borrowers. An individual or entity showing low repaying ability would be probably excluded from the financial network. For example, a person who likes to gamble will not get loans from his relatives and friends. The bad reputation would be also spread in the network. Second, social networks facilitate the lending process. Unlike the formal procedure, informal financial transactions required little paperwork and nearly no transaction fees. It is not necessary to transform the observable information to verifiable information. So, the lending process is simple and quick. Oral agreements are sometimes sufficient for completion of financial transactions. Third, payment is flexible. A formal lending contract usually prescribes

⁷⁴ A similar figure is to be found in Xie and Li (2011). For the inner circle of social network, the interest rate is positive though we observe the existence of interest-free loans. It is because One can pay by gift or offer an interest-free loan in the future. The payment of interest is highly flexible.

the payment of principal and interest. However, in the informal financial market, payment takes a flexible form. It is observed that individuals who lend to relatives and friends require no payment of interest. According to the principle of reciprocity, lenders are granted the right to borrow interest free from relatives and friends in the future, or be rewarded by gifts from borrowers. The key point is that the contract must be informal and implicit so that the good relationship can be extended into the future. Last but not least, social networks are also a means to enforce the implicit contract. The enforcement mechanism has been already discussed in previous chapters. The closeness of the relationship determines the effectiveness of the relational enforcement mechanism. Exiting from a tight relationship, such as family, causes a prohibitively high cost that is unbearable for the members. A loan to a relative, in the normal case, involves only little risk. Also, the outer network is less valuable for networked individuals. Participants would exit from the network instead of repaying the loan. Therefore, if the relationship is not so close and valuable, the enforcement mechanism would be less effective. In sum, the risk and transaction cost would be lowered while the financial transaction is embedded in the social network. With the risk and cost controlled, the informal financial system survives. In fact, even in the presence of a well-developed financial market, the advantage of private lending would still exist and make it complementary to the formal financial market.

As the economy grows, the financial market needs to grow as well. So, the volume of lending increases. As mentioned earlier, the growth of the market results in the dis-embedding of the transaction from social relation. If the volume of lending increases, the risk rises. On one hand, lenders attempt to establish a relationship with formal institutions to increase the security of transactions. A case study suggested that lending contracts involving more than 3000 Yuan usually took the written form. In doing so, information is preserved for verification in the future. On the other hand, they require a higher interest rate to compensate the rising risk. As mentioned, the interest rate is not controlled in the informal financial market. Hence, if the risk is significantly high, the interest rate would also be high. In practice, the annual interest rate can be more than 40%. Increasing risk is not the only factor accounting for the high interest rate. As the informal lending procedure is easy, the private lending sector is able to handle urgent financial demand and short-term loans. However, urgent demand increases the cost of liquidity. So it also accounts for a high interest rate.

It is not unusual that formal contract is used among relatives and friends. Sometimes, instead of gifts, interest is also paid to the lenders. Yet, the interest rate could not be as high as the market interest rate, which does not take the benefit of long-term cooperation into account. The social network can be understood as a cooperative insurance. One contributes to the network and generates the benefit from the membership. Hence, the system enables an exchange of current with future benefit. In this regard, the social network adds flexibility to the financial system and makes lending for impersonal markets possible. However, as mentioned, the relational system is good at dealing with small financial demand. Moreover, the scope of the

informal financial market is too limited if it only enables financial transactions among relatives and friends. Actually, the financial network expands as shown in figure 8.1.

Like households, firms also develop the financial network to finance and trade. In the case of Puyuan area (Ruan and Zhang, 2008), the initial capital was not only self-financed but also financed by the relatives. The amount of lending by the relatives was higher than the banks. So, the social relation substituted the formal institution to a considerable degree in prompting the growth of the private sector. Moreover, firms clustered with the aim to relax the credit rationing. Facing the working capital crunch, they depended heavily on two financing sources. Relatives and friends were the largest financing source. More than half the working capital came from the relatives and friends. The second largest source was the cluster-based firms. The so-called “trade credit” was provided to the firms in need by the upstream and downstream firms. Only the large-sized firms like logistic enterprises, finishing, and dyeing factories had a better chance to obtain bank loans. Therefore, the social network served particularly the SMEs with respect to the financial issue, and it helped extraordinarily to develop the infant private sector. Besides, the flexible payment performed the role of financial support as well. Some firms in the industry involving high market risk were allowed to fulfill the payment by the mutual financial status. In that kind of environment, social capital such as trust was very important in maintaining the market order. As we may predict, disputes arising from the payment would also be resolved out of court. Relation-based governance provided a one-fits-all solution to the financing problem, particularly for the SMEs in the private sector.

The Outer Circle of the Social Network: Intermediated Lending and Private Lending Firms

Compared to the inner circle of the social network, the outer circle involves “weak ties”. It is weak because the interactions between two parties are not as frequent as those required to maintain a “strong tie”. They may be acquaintances to each other, or are friends of friends. However, “weak ties” expand the social network. One cannot choose relatives. Hence, the inner circle of the network is to some degree fixed. But, the outer circle of the network involves some freedom to choose, so a private financial intermediary is formed to generate profit from matching financial demand and supply. Compared to the direct lending between relatives and friends, intermediated lending involves more market processes. A private lending firm requires a formal contract, loan guarantee, and interest. Due to the high cost of producing liquidity in the private sector, and the high risk, the interest rate is usually higher than that of banks. Moreover, private lending firms restrict access to the financial services they provide. Only those who are capable of lending a big sum of money are potential clients of the firms. Certainly, a person can also pool the money from relatives and friends to make lending to the firm, and the return will be shared. In most cases, lending services are provided to meet corporate financial demand. Most financial demand arises from the

expansion of production.

In fact, private lending firms practice in the gray area. It is legal to form microloans firms. However, it is illegal for them to take savings, so there are a variety of private lending firms. Several private firms can establish microloans firms to share the liquidity among the clustered firms. Some private lending firms, however, take savings from individuals and lend to firms. It captures the nature of an intermediary. However, this practice is not protected by law, so they enforce the contracts by establishing a long-term cooperative relationship. Some private lending entities are underground banks. They are huge in size, covering many areas of banking services ranging from lending to currency exchange. However, their practice is illegal. The illegal practice makes them solely dependent on the web of relationships and eventually violence.

At first glance, private lending firms are specialized financial intermediaries seeking to create institutional ties with the formal institution. However, although the intermediated lending is to some degree impersonalized, private lending firms still rely significantly on the social network given the imperfect market. After all, risk control is a big challenge for the private sector that is not perfectly embedded in the formal institution. If private lending firms make lending decisions based on the average estimated market risk, the problem of adverse selection may arise and destroy the informal financial market. In practice, a private lending firm does not provide services to an unknown client, because it only affords to acquire information through point-to-point relationships. Hence, they tend to select the trustworthy clients from the members of the social network. Figure 8.2 shows how adverse selection occurs.

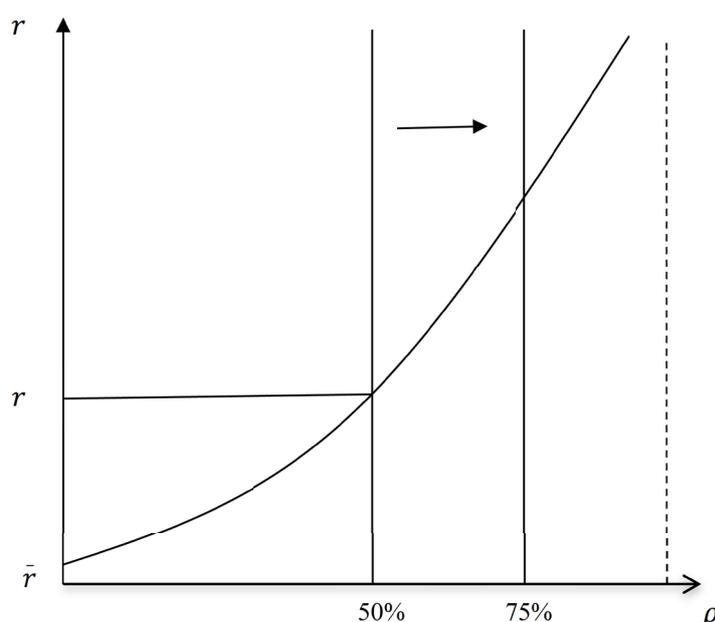


Figure 8.2 The adverse selection in the financial market

If ρ is equal to 100%, nobody will be lending. The interest rate becomes infinitely large when the probability of NPLs approaches 100%. If a financial intermediary does not have access to the information necessary for the lending decision, it would estimate an average value of the probability distribution of risk. In this case, I assume that the risk is distributed equally. So, the average risk is 50%, and the financial intermediary would require the interest rate r . But, all the individuals who would repay the loan with probability above 50% give up borrowing loans from the private financial sector because the interest rate is too high for them. Then, only the high risk loans exist in the market. The second round of estimation tells the lender that the average value of the probability distribution of risk is 75%. As a result, the interest rate is raised again and more borrowers quit the private lending market. This process continues until the market collapses.

However, the lemon market is only a thought experiment. In fact, China's informal financial market is embedded in social relations. The point-to-point relationship provides the access to information of individual borrowers and thus makes the risk estimate more accurate. Hence, a financial intermediary does not seek market opportunities from the group of unknown clients, but only provide services to the clients it has a relationship with. The adverse selection will not threaten the survival of the informal financial sector, as long as the financial transaction is carried out between networked market participants. The price is that private lending firms are trapped in the social network and are not able to grow. Any effort to develop business outside the social network would probably end up in rising risk that is uncontrollable for the informal financial sector. Establishing and maintaining long-term relationships is costly. A private lending firm must be small in size and hence is only able to offer small loans.

Compared to the lending between relatives and friends, the emergence of the informal financial intermediary improves the efficiency of resource allocation. First, intermediated lending involves the matching of demand and supply. Those who have financial demand do not need to search for suppliers by themselves. As mentioned, private lending firms are specialized in providing a better match between demand and supply in the credit market. Specialization reduces the search cost. Moreover, the introduction of financial intermediary expands the financial network to meet the increasing demand. Second, it pools the savings by offering a higher risk, higher return option for investment and thus is able to lend a larger amount of loans compared with the lending ability of the inner circle of the social network.

Due to the attributes of social relation, the informal financial network cannot grow without limits, and hence, end up mostly on a local network. The long-term relationship is more valuable for market participants. To minimize the high risk arising from the financial transaction, the best strategy is to serve several trustworthy clients. Frequent interaction between service providers and clients reinforces the cooperation. During the early stage of reform, the market was "thin". It is difficult to

switch to new clients or service providers. So informal financial intermediaries and clients tend to develop long-term cooperative relationships. It is observed that private lending firms served several regular clients. The business relationship is highly stable as a response to the high risk associated with informal financial transactions.

Hence, the informal financial sector features a decentralized structure. Numerous private lending firms emerged and developed a highly stable local network. The aggregate supply of liquidity is divided into small amounts and distributed by numerous financial intermediaries. This structure was adapted to the Chinese economy during the early stage of reform. In the TVE sector, the collective TVEs could be financed by the formal financial institutions such as village credit cooperatives or local banks, because they had institutional ties with local governments. However, those household-run establishments could not obtain loans from the formal financial institutions. At the very beginning, they could be funded by the inner circle of the social network. However, when they had grown into larger private enterprises, the small-scale financial network was not able to meet the increasing financial demand. So, the market mechanism was incorporated into the social network to fashion a new financial institution. The efforts ended up in the emergence of private lending firms which improves the efficiency of allocation of local financial resources. By the end, stable relationships were established between financial intermediaries, lenders, and borrowers. Those private firms obtained access to the local financial resource. The social network diverted the local financial capacity to meet the demand of the local private firms. The globally extremely decentralized, locally integrated economic system could handle the financial issue that China's private sector faced. It was, in nature, a self-preserving and self-generating system. And the key factor was the social network.

However, a relation-based financial system would become inefficient if the private firms keep growing. The financial demand would be very large, and thus beyond the financial capacity that could be generated from the local network. So, as the private sector keeps expanding, it would seek to obtain loans from formal financial institutions such as banks. The first reason is the limited financial capacity, and the second is risk control. This self-generating system works well in a developing economy. However, the integrated character of the local economic system makes it vulnerable to the crisis. The inner circle of the social network could control the risk by enabling the flexible payment. Yet, the outer circle of the social network, while being shocked by the crisis, would be disconnected and the participants would turn to the formal institution to protect themselves. Indeed, compared with the risk, financial capacity is a more important issue. In practice, cross-guarantee helps to solve the problem. However, the institutional gap between private sector and formal financial institutions may increase the systemic risk.

Actually, there is one more form of intermediated lending. Besides those professional intermediaries, the big firms also carried out the function of financial nexus. They

provided loans to other small firms from the same areas. Because of the network which enables the long-term social exchange, the big firms were not only able to control the risk associated with the loans but also incentivized to make loans to the small firms and took benefits in the social exchange domain, which could be the information, the shared production capacity, the flexible payment and the increasing bargaining power in the local affairs. And the small firms, through the social network, gained access to the financial services. The advantage of the big firm being a financial intermediary is that such a financial system is more flexible and more resistant to the crisis as their interest is highly mixed. Even after most of the professional intermediaries ran into difficulties, the financial ecosystem consisting of one central big firm and the small firms surrounding it plays still a relevant role in the small-scaled financial transactions.

Surveys on the Informal Credit Market

I draw on some surveys and case studies to show the important role of social relation in the informal financial transaction. The Guangdong Division of the PBC (2002) conducted a survey on the informal financial market in 2001. They distinguished between two forms of informal lending, organized and unorganized. Organized lending is what I term “intermediated lending”. The research group found that information companies, loan offices, and loan cooperatives were set up to provide liquidity. However, the scale of such “intermediated lending” was small, with less than 90 million Yuan in 2001. At the same time, the amount of private lending was 5.9 billion Yuan, while the amount of lending between firms was 648 million Yuan. One explanation is that it was difficult to collect data of the transactions in a gray area. What we have seen might be the tip of the iceberg.

According to the survey, the scale of private lending was significantly larger than the scale of lending between firms. A high level of trust was formed in the inner circle of the social network, lowering the transaction cost. Hence, the private lending involved low costs, short procedures, and flexible repayment. If it was too costly for one to obtain bank loans or one has an urgent need for liquidity, one would choose to borrow money from relatives and friends. Embedding the financial transaction in the culture reduces the risk. So, where culture persists, there are private lending activities. The National School of Development of Beijing University also carried out a survey of a sample of 1951 rural households, and studies their lending behaviors (Yang, Chen and Zhu, 2011). They found the informal financial transaction more frequent than the formal transaction, and both transactions were similar in scale. About 88% of the loans were interest free. Most lending contracts were concluded in oral form. As the authors pointed out, the network, relationship, and trust played an essential role in creating an informal financial sector.

The research group from the Guangdong Division of the PBC came to similar findings. 72.9% of the loans required neither collateral nor guarantee. It was the social

network that reduced the risk. The amount of loans involved in disputes accounted for 9.6% of the total amount. Most disputes arose between individuals. The low rate of dispute implies that the rate of repayment was high, about 60% to 80%, much higher than the rate of repayment for the banks in the area. They also found that the interest rate was flexible in the informal financial market. Lending between relatives or friends was generally interest-free. In some cases, they required the interest to be paid, but the interest rate was not higher than that offered by banks. Certainly, for the outer circle of the social network, the rising risk resulted in a markup on interest rates. The annual interest rate varied from 9.6% to 36%, lower than the upper level prescribed in the law. There were also exceptions. The annual interest rate could rise to 60%, indicating either high risk or urgent demand.

The surveys also suggested that traditional culture affects the informal financial transaction to a considerable degree. Hence, the differential mode of association can apply to the financial network and explain the private lending behavior. The problem is that the informal financial sector could not afford to lend a large amount of loans. Particularly, when the economy kept growing, the informal sector could not meet the increasing financial demand. So, firms still wanted to cooperate with the banks. The cross-guarantee mechanism was developed to solve the problem.

8.3 The Cross-Guarantee Mechanism

Cross-guarantee is usually seen in group or joint liability lending. In some cases, they refer to the same thing. As mentioned, it was difficult for the private sector to obtain bank loans because they could neither meet the collateral requirement nor share the genuine information with banks through institutional ties. Meanwhile, the private lending, being characterized by microloans and frequent transactions, could not meet the increasing financial demand of the private sector. Therefore, a deliberate mechanism must be developed to solve the problem or the growth would be deterred. In fact, the personal relationship is one of the solutions to the limited access to financial services. As the staff of state-owned banks are all in certain social network, the social network match the financial demand and supply in an informal way. For example, an owner of a private firm always seeks to develop the relationship with a bank manager who makes the decision with respect to lending. It works sometimes. But the problem is that this solution usually involves bribery. And making loans to the firms with poor performance increases the systemic risk. Besides the personal relationship, the social network also provides another solution, which is the cross-guarantee mechanism. To put it in a simple way, several firms borrow from a bank and guarantee the loans they lend for each other. In doing so, joint liability is imposed on the entire borrowers. Joint liability implies risk sharing. Hence, the risk decreases while the number of firms shares the joint liability. If the number of firms is sufficiently large, banks would lend to private firms due to the declining risk.

Because cross-guarantee is a widely used financial mechanism, scholars are highly

interested in its effect and consequence. Stiglitz (1990) argued that peer monitoring is a partial solution to the moral hazard problem in the credit market. Impavido (1998) developed a model to show that group lending is a possible means to relax the credit rationing if the physical collateral is not available. Ghatak and Guinnane (1999) also suggested that joint liability lending promotes screening, monitoring, state verification, and enforcement of repayment. Xie and Li (2011) emphasized the role of reputation in increasing the likelihood of repayment in group lending. Elsner and Zhang (2016) found the application of cross-guarantee mechanism in the historical documents in their paper on silk road and they call it “social leverage”.

Mainstream research focuses on the advantage of the cross-guarantee mechanism. First, it is a self-enforcing mechanism. Second, it creates opportunities for private firms to obtain bank loans by diversifying the risk. However, the existing literature does not investigate the dynamic of interaction between banks and firms. As I pointed out, the private sector faces a networked environment while the banks, as a part of the state-owned economy, are bound to the formal rules. The institutional gap would result in rising risk. The interaction between the two systems might cause a crisis under certain circumstances. Li had already mentioned the potential risk embedded in the coexistence of relation-based and rule-based governance, and ascribed the Asian financial crisis to the institutional conflict. I will model the cross-guarantee mechanism to shed some light on the understanding of the conflict between different institutional settings that the banks and private sector face.

Assume that there are N firms that are networked. If a firm wants to borrow from a bank, it must have the loan guaranteed by other networked firms. According to the principle of reciprocity, it also has to guarantee the loans borrowed by other firms. To simplify the model, I assume that there are two types of firms. One is the “good” firm that always makes a profit. The other is the “bad” firm that could fail to repay the loans. If a “good” firm obtains the loan, it can expand production and generate additional profit. However, it has to pay the interest and assume the debt obligation of “bad” firms. Therefore, a “good” firm would borrow only when the following inequation holds:

$$f(L) - \rho C L / (N - C) - r > 0 \quad (2)$$

L denotes the amount of loan that an individual firm borrows. $f(L)$ denotes the profit generated due to the expansion of production. C denotes the number of the “bad” firm. ρ denotes the probability with which the “bad” firm fails to repay the loan. As “bad” firms are homogeneous, they fail to repay loans at the same time. “Good” firms need to assume the debts of “bad” firms. So, the expected cost of joining the guarantee network is $\rho C L / (N - C)$. Besides, the firm needs to pay the regular interest r . When the benefit outweighs the cost, the firm decides to participate in the financial network and take the loan. Therefore, to form the cross-guarantee network, the profit needs to be high. As shown in the previous chapter, rising export demand

may ensure the high profit rate. Second, ρ should be low. Because the firms face the same business environment, the risk parameter is presumably associated with the ability of individual entrepreneurs. Third, the number of “bad” firms should be small. The total cost rises with the proportion of “bad” firms in the network. In sum, it is always beneficial for “bad” firms to borrow. As for the “good” firms, if equation (2) holds, they would allow to weave “bad” firms into the financial network.

It is worth mentioning that the information is perfect and complete for the members of the financial network. It is to say that $(f(L), \rho, N, C, L, r)$ is known to any of the firms in the networked environment. As discussed above, the social network facilitates information transmission. The profit rate and business performance of individual firms, as well as entrepreneur ability, is interesting information for the indigenous entrepreneurs and they can easily acquire the information through the personal relationships. In that kind of environment, the information of $(f(L), \rho, C)$ is observable information. By observable information, I mean that only the networked firms, as insiders, have access to such information. The banks, as outsiders, cannot get the information because it is not publicly available.

The aim of introducing a cross-guarantee mechanism is to solve the financial problem for private firms. So, not only is the strategy of firms of importance, but the decision function of banks also matters. The major factor affecting the lending decision of banks is the risk. However, banks cannot make use of observable information. The observable information is produced in a networked environment. Hence, it cannot be verified or the verification incurs prohibitively high cost. The state-owned sector, being embedded in the rule-based governance system, cannot make use of the information. Rule-based governance requires that the information be produced and processed in a specified procedure and form. For example, a manager of the bank hears the rumor that one of their clients is not competitive in the market anymore. It is actually observable for the firms in the cluster, and the entrepreneurs may be very sensitive to the rumors. However, the manager cannot quote the information in the report because he did not obtain the information from a formal source such as accounting reports, government documents, or forms filled by clients with a commitment to the truth. So, this part of information will never be used in a formal procedure, even when the bank staffs hear the rumors.

Hence, I assume that, unlike its clients perfect in information, the bank is only capable of estimating an average risk. The bank predicts that an individual firm defaults with probability k , and tries to minimize the risk by imposing joint liability. For the bank, the risk is reduced when the number of firms sharing joint liability increases. So, the market risk can be described as $q(k, N)$. The market risk is referred to as the probability that a bank cannot get loans repaid. Two factors affect the market risk. The first one is the probability of default for individual firms. The second one is the size of the network. Hence, the condition for lending is as follows:

$$(1 - q(k, N))(1 + r)L + q(k, N) * 0 > L \quad (3)$$

And it can be transformed into:

$$q(k, N) < 1/(1 + r) \quad (4)$$

The implication is not counterintuitive. With higher interest rates, banks are ready to take more risk. However, the interest rate was controlled for the Chinese banks. Let r denote the maximum value of the interest rate. In the case of $q(k, N) > 1/(1 + r)$, the banks deny the application for loans. However, the parameter N indicates that the cross-guarantee mechanism increases the opportunity for private firms to obtain loans from banks because risk decreases in N . So, it is highly probable that $q(k, N) < 1/(1 + r)$ holds.

It is okay when all clients repay the loans. Then they cooperate with banks for a second round. This system seems to keep running forever. However, if the “bad” firms default, the system might run into a crisis. This event has two effects on the risk estimate $q(k, N)$. The first effect is obvious. There are only $N - C$ firms alive. Hence, the scale of insurance decreases. The second effect is not so obvious. The banks estimate that an individual firm might default with probability k prior to the crisis. And they observe that C firms default and would modify the estimate of risk by the observation. They may replace the probability k with d . If k is higher than d , both effects work against each other. It depends on which effect is stronger. But if k is lower than d , the risk rises in the eye of the banks. The rising risk may lead to the following situation:

$$q(d, N - C) > 1/(1 + r) \quad (5)$$

So, the banks would require the “good” firms to repay the loans immediately because the risk turns out to be too high. A moderate consequence is a decrease in production scale. Without the external finance, private firms cannot maintain a high production capacity, or have to borrow from underground banks or lending firms, and pay a very high interest and bear more risk. It is also possible that “good” firms also default when early repayment is required. These firms need to pay the debts, the interest, and now repay the loans. They might not have sufficient liquidity.

In the model, there are two factors creating the systematic problem. First, the size of the social network is inherently limited. So, N can neither be manipulated by banks nor controlled by firms. It takes time and effort to create social capital. A social network can only be created by recurrent interactions. So, a “good” firm is willing to guarantee the loan made to a “bad” firm because the size of the social network is limited, and the bank requires sufficient firms to participate in the cross-guarantee program. Second, banks tend to overestimate credit risk. The actual probability with which a firm defaults is ρd . Due to the imperfect information, banks use d to

measure the level of risk. So, the overestimating of risk may lead to a tight credit policy which is more harmful to an economy undergoing rapid growth than a risky credit policy.

In figure 8.3, I show the dynamic of the model. At first, private firms need loans to finance the expansion of production. However, because of $q(k, 0) = k > 1/(1 + r)$, an individual firm stands no chance to obtain the loan. So, the firms have to decide if they guarantee the liabilities for each other and thus reduce the market risk both for banks and themselves. If $f(L) - \rho d L / (1 - d) - r > 0$ holds, the firms enter into the financial network. Otherwise, they would withdraw the plan. If it is beneficial for firms to provide the reciprocal guarantee, banks need to calculate if it is beneficial for them to make the loans. As mentioned earlier, in the eyes of the bank, the market risk is measured by $q(k, N)$. So, in the case of $q(k, N) < 1/(1 + r)$, the bank decides to lend. If the result of calculation suggests the opposite, it denies the application. By the end of a round of interaction, the firms have to repay the loans. Another round of interaction will be carried out in the same way if the firms fulfill the repayment obligation. But, if the firms default, the cross-guarantee system would collapse. As the bank cannot rely on the information unverifiable for a formal institution, it estimates the risk by observation. As a result, the bank would modify the risk estimate from $q(k, N)$ to $q(d, N - C)$. If d is higher than k , or the effect of downsizing the network is weaker than that of a decrease in the probability of default of an individual firm, the bank may require early repayment, which makes the “good” firms cut the production capacity or even default themselves. However, if the case is $q(d, N - C) < q(k, N)$, the bank would continue the cooperation with the “good” firms.

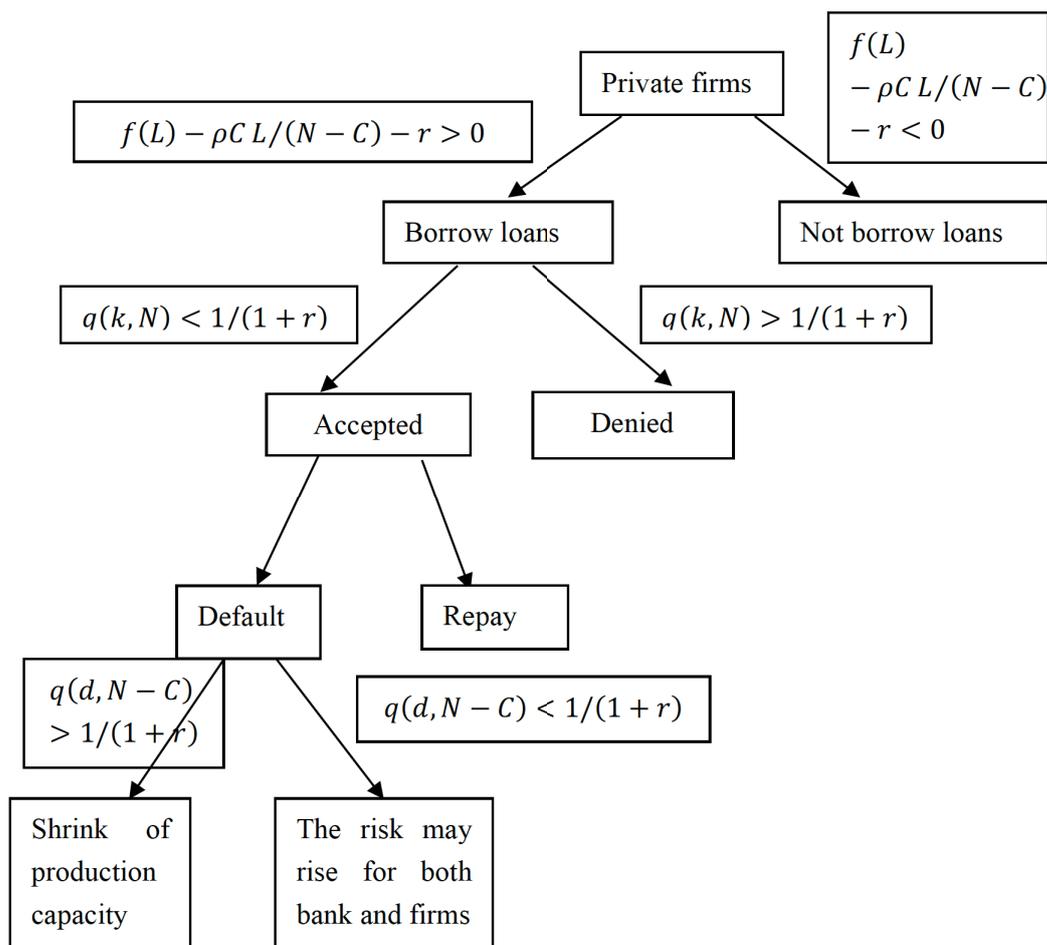


Figure 8.3 The dynamic of interactions in credit market

This model shows that the social network plays a relevant role in the financial market. The size of the social network, which is depicted by N , determines if the cross-guarantee mechanism works. Social relation enables the cross-guarantee mechanism and thus reduces the risk for banks. If the risk is reduced sufficiently, the banks would make loans to the private sector. However, it is also the social network sowing the seeds of crisis. Under the relational system, the information is not processed and preserved in the way that can be verified for the formal institutions. So, due to the institutional gap, the information is not perfect for banks, which leads to the overestimating of risk. I assume that ρ is given in the model. In practice, they may vary over time. In an economy undergoing rapid development, ρ is low because even an average entrepreneur seizes the opportunity for success. In an economy undergoing slowdown, the intense market competition increases the probability of decline of the “bad” firms. Therefore, the cross-guarantee mechanism performs better in an economy that is experiencing strong growth.

To simplify the model, I distinguished between two types of firm, the “good” one and “bad” one, with the ratio of “good” to “bad” given. I can relax this assumption and assume that firms are all different, and assign a competitive index to them. The

competitive index indicates, by its literal meaning, the competitiveness of a firm ranging from 1 to N . The firm with index 1 is the first firm that defaults and the firm with index 2 the second, and so on. The market condition determines how many firms default. Given the market condition, the number of firms that would probably default, which is denoted by C , is also determined, and they default with probability ρ . If the demand rises rapidly, C is small. It increases the benefit of firms and reduces the risk for banks. If the growth is slowed down or even turned into a recession, C is big and the cross-guarantee system becomes very fragile and vulnerable to the crisis. In sum, the institutional gap is not much of a problem in the financial market if the economy booms. However, during a recession, the cooperation between formal financial institutions and the private sector would probably fail unless the economic activity of the private sector is dis-embedded from the traditional network and re-embedded in the mixed institution of developmental network and rule-based governance, which will be discussed in the next chapter.

8.4 Summary and Consequences for the Following Investigation

In this part, I will summarize. China's financial system consists of two sectors, a formal and an informal sector. In the formal sector, almost all the banks are owned or controlled by the state. Owing to the institutional ties and the purpose of risk minimization, the banks preferred to lend to SOEs. Private firms had limited access to financial support. Yet, the SOEs were not so competitive, due to the different incentive structure. As we may expect, a huge part of loans made to the SOEs were turned into NPLs.

China's economic growth is ascribed to the creation of a private sector, but not restructuring of SOEs. Over the last three decades, China's private sector has grown at an unprecedented rate. Enormous financial demand was derived from the rapid expansion of the private sector. This demand could not be met through existing means. Therefore, an informal financial market, basically a private lending market, was developed. Private lending behavior is affected by the local culture, featuring the "differential mode of association". The social relation provides the information source and the enforcement mechanism. However, the closeness of the relationship decreases from the center to the edge of the personal network. The outer circle of the personal network suggests higher lending risk compared with the inner circle. Hence, for the loan made to a borrower who is only "weakly" tied to the lender, a higher interest rate is required to compensate the rising risk. So, private lending consists of two parts. One is lending between relatives and close friends involving low risk, low interest rate, and flexible repayment. At this level, social relation performs as the information source and enforcement means. The other one is specialized lending activities of informal financial intermediaries, involving high risk, high interest rate, and less flexible repayment. However, private lending firms pool the money and can afford to lend the medium amount loans to firms in need.

When the lender's decision is based on the information obtained from social relations, the lending procedure is short and not costly. Yet, the disadvantage of specialized private lending is that it makes the financial system fragile, particularly in a transitional economy. It can be considered as financial activity during the period of prosperity, yet resembles gambling during the period of economic recession.

As the Chinese economy kept growing, financial demand increased as well. Particularly, rising export demand made the appetite of the Chinese manufacturing sector for liquidity ever larger. So, private firms began to seek cooperation with the banks. To control risk, several firms provided a reciprocal guarantee for each other's liability. They usually clustered to share information and resources. The problem was that the information they produced and shared could not be verified by the banks. So, the banks probably overestimated the risk. In that kind of environment, if there is an external shock to the economic system, it may destroy the most fragile section of the informal financial system. The informal financial market as a whole would also be impaired as a result of the chain effect of a crisis. Hence, it is extraordinarily dangerous for the Chinese economy to have a large-sized private intermediated lending sector. As a response, China's financial reform carries on. First, further liberalization of the financial market can help to increase the supply of microloans. Recently, the first five private banks have been allowed to be formed by ten private enterprises. As reported, two of these five private banks focus on making microloans. One of them is invested in by the Alibaba Group. The aim of the Alibaba Group is to serve the small and medium-sized enterprises. It has numerous small and medium-sized enterprises retailing on its online platform. Hence, it has better access to information on small and medium-sized enterprises and is able to make an accurate evaluation of the value of those enterprises. Now, the Alibaba Group enters into the financial market and it will also focus on the customers on the online platform. The combination of financial transaction and online transaction will result in a new solution to microloans.

Second, more financial products are available in the market. Based on the accumulated knowledge and experience, together with the development of financial theory, more and more new financial products are invented. The variety of financial products is supposed to improve the efficiency of financial system, as the efficiency market hypothesis would predict. However, it may also result in the contrary increasing the systemic risk. For example, the abuses of financial derivatives are considered the reason for the financial crisis in 2008. High leverage makes the financial system vulnerable. And during the crisis, the bailout of the "too-big-to-fails" would be an extra burden. As the financial market exhibits a characteristic of power law, a slight change in "input" signal would make the behavior totally different (Lux and Marchesi, 1999).⁷⁵ Therefore, the China banking regulatory commission must be very prudent towards the financial innovation and regulate such activities in a

⁷⁵ Lux and Marchesi's model is in contradiction with the efficiency market hypothesis, which understands the operation of financial market from a neoclassical perspective. The efficiency market hypothesis is challenged for its inability to explain the financial crisis.

sophisticated way. On one hand, it must prevent any underestimating of risk to avoid potential crisis. On the other hand, it should not impose the barrier to beneficial financial innovation due to the over-emphasis on risk control.

Third, direct finance is an alternative to indirect finance. China has already set up stock markets in Shanghai and Shenzhen. Some firms would choose to go IPO if their application is approved by the regulatory authority. For those enterprises that do not qualify for IPO, angel investment, venture capital, and private equity are also available for the small demand for a capital increase. Direct finance is a competitive substitution for informal private lending. The only problem is that direct finance is a part of modern business. To gain access to the venture capital, people need to pay the learning cost. On the contrary, as private lending is embedded in the local culture, people do not need to learn how to lend money from relatives. Hence, in the metropolitan area, direct finance began to play an increasingly important role. However, in the towns and villages, the informal financial system persists.

I predict that the financial system will be gradually dis-embedded from the traditional network. However, the private lending sector will exist for a long time. Under certain circumstances, private lending provides a low-cost solution for the exchange of liquidity. It will play a complementary, rather than a substitute role in the formal banking system. However, another innovation in financial transaction threatens the future of the private lending sector. It is the rise of web banks. Information technology reduces the transaction cost, making microloans also profitable for the formal institutions. Web banks may have millions of customers and thus have better ability to control risk by using big data. Transplanting the transaction into the online form extends the impersonal market to where it has not reached before because it lowers the transaction cost to lower than that of social relation. But at the same time, the new financial products also get into the traditional network and are potential sources of bubble building. The proper solution might be embedding the financial market in a developmental network instead of the traditional network.

Actually, the Chinese government pays particular attention to the financial security and stability and try to prevent the systematic risk. Recent research (Rasmus, 2016) shows that private debt ratios in China are not extraordinarily high and that China is indebted only in RMB. So the Chinese government still has the financial system in control. After the 19th national congress of the CPC October 2017 and the 13th national people's congress march 2018, several new policies are on the agenda. First, a financial stability and development committee is to be organized under the State Council. It works at national level to control the risk of financial crisis. Second, the informal financial activities are partly acknowledged and regulated through the formal measures. For example, the private lending contract is supported by the judicial authorities in spite of the mutually agreed high interest rate. Third, a balance between opening-up policy and security is to be sought. China wants to be part of world's financial network for the improvement of financial efficiency. However, it can

also introduce more risk to the existing system. Again, the experimental approach is adopted to see in which way China can liberalize the financial sector while having it in control. Now the free trade zones are the experimental areas and a guideline on the negative list of financial services is just published. So, what the government has done hints that the private lending network would be increasingly regulated and protected by the formal institution and would be also connected to the global network as long as the opening policy and information technology allows it. In that case, the aforementioned developmental network would emerge as the interaction among informal financial sector, government and global financial network.

9. The Institutional Rivalry between Rule of Relation system and Rule of Law System

This chapter is devoted to the investigation of the evolutionary coexistence of the “rule of law” and the “rule of relation” systems and the competition between them. According to Vernon Smith, under the “rule of relation” system the transaction indicates a personalized character whilst under the “rule of law” system the impersonal order of the market is applied to govern the transaction. There is an inconsistency between these two institutions regarding the involvement of personal relationships. A number of questions arise in this context, inter alia whether the transactions are exclusively governed by the impersonal market order, whether the “rule of relation” system defends against any kind of attempt to make the shift in institution, and whether the co-existence of these two institutions is to be expected and a mixed economy being constructed on the developmental network emerges eventually when China enters the post-reform era.

In principle, the economic reform has two effects. First, it causes a one-shot shift in resource allocation, so that the “above-average” growth is to be observed following the effective economic reform. Second, it draws the economy back to a “normal” track so that it can pursue an efficient growth pattern. It means that the economy will not suffer from the low growth rate in the long run but maximize the production potential. All these happen only in an ideal world. After the potential of reform has been exhausted, the slowdown is biting the Chinese economy. During the slowdown, the second effect plays an increasingly important role whereas the first effect disappears totally. And it is possible that the institutional change takes place resulting in a more suitable environment for the new growth pattern.

According to the IMF, in 2014, China overtook the USA to be the world’s largest economy. Such a huge economy could not be solely underpinned by the informal institution. Although it is beneficial to embed the economy in the networked system during the early stage of transition, the benefit declines as the reform proceeds. With the increasing size of the market, the rule-based governance becomes more efficient in coordinating the production and exchange than the relation-based governance. It turns out that the extensive order of the market gains increasing influence and thus undermines the importance of the Chinese characteristics. The formal contracts, legal enforcement and professional services are now necessary components of the Chinese economy. In some aspects, it is difficult to tell the difference between how the Chinese and US economy works. Taking a glance at Shanghai and New York, the business culture and even the life style there bear remarkable resemblances to each other. It raises several interesting questions. Is that a convergence in the growth pattern? Will the Chinese characteristics disappear when the extensive order of the market becomes the major means to govern transactions? To address these questions, we need to develop a model convenient for the investigation of the evolutionary

dynamic of the coexistence of the market order and the relational culture. This will be the focus of the current chapter.

This chapter is arranged into four parts. Part one analyzes the conditions under which the institutional change will take place. The institution tends to persist due to the inertia of common belief, which is difficult to be shifted as it involves significant coordination problems. Hence, the institutional change may probably occur on account of the external shock that makes the coordination less costly and the shift in belief more beneficial. Part two introduces two changes caused by the opening-up policy on Chinese economy. The first change is China's increasing contribution to the international trade, discussed in the previous chapter. The second one is the rising volume of foreign investment. Through these two foreign-related economic activities, the relational system was forced to be connected with the rule-based exchange system. Hence, part three endeavors to find out what will come out of the collision between these two different institutions by modelling the collision on an evolutionary game-theoretic approach. As part 3 contributes to the theoretical enrichment, part 4 will deal with a more realistic state, in which the structured and layered network emerges as a result of interaction of two institutions at different level. The last part concludes.

9.1 The Institutional Change and Institutional Inertia

According to the model of chapter 3, the institutional change towards the rule of law is welfare-improving given a sufficiently large size of the market. The size of market will eventually exceed the threshold value when the market keeps growing. And there exists a turning point for the institutional competition. If we approach the dynamic of institutional change from a transaction cost viewpoint, we will probably associate the institutional change with that "turning point". Because beyond that point the cost of maintaining a relational system becomes higher than the cost of running a rule-based trading system, it is natural to a rational individual to shift from the former to the latter institution. However, the complication here is that the institutional change is not merely a decision made by individuals independently and it can only be solved in a coordinated way. To put it more precisely, it is not beneficial for an individual to go for the institutional change if others remain in the old system.

One thing for sure is that the institutional transition towards the rule of law would be welfare-improving as long as the market progresses beyond a certain point. But it does not mean that the institutional change occurs spontaneously. The institutional choice has a network effect. Everyone's decision is dependent on all other persons' decisions elsewhere. Hence, if the individuals cannot coordinate the shift in expectation smoothly, they fail to make the institutional change happen. Because it is necessary to introduce the interpersonal influence into the model of institutional change (Bush, 1987; North, 1990; Aoki, 2001; Elsner 2013; Elsner et al, 2014), the transaction cost paradigm cannot help us to refine our understanding on the subject.

The best way to further the transaction cost paradigm is to refine the concept of institution. Aoki's approach to institution, with its emphasis on the mental dimension, is a good one to be used here. It views the institution as a process so that both the endogenously-appearing and self-enforcing nature of institution is taken into consideration. Four phases are involved in the institutional dynamic. They are public presentation, common belief, cultural trait and behavioral pattern. The first three form the expectations. And the last one is the behavior shaped by the expectations. The public presentation of institution is like a lighthouse on the shore guiding the vessels over the sea. Under the influence of public presentation, the common belief is formed and evolved to the cultural trait for individuals. Then the behavior pattern emerges as the cultural trait is duplicated and spreads. Sometimes, the behavior pattern is considered equivalent to the institution. But if we glance at the origins of emerging behavior pattern, we find that the concept of institution has more dimensions. It is particularly important to our understanding of institutional change.

A thorough investigation of the institution as a dynamic process suggests that the phase of formation of the common belief is to be affected first to cause a shift in the entire institution. The shift in common belief is always prior to the institutional change. As the common belief coevolves with the institution (in behavioral sense), the common belief is highly stable in the case of the institutional inertia. No one will make the move unless others make the move prior to his move or commit to make the move and the commitment is credible. Hence, if the coordination fails with respect to the shift in common belief, the institutional change will not take place even if it would have improved welfare significantly. The situation involves the coordination in character and can be illustrated by the stag-hunt game.

	Hunt stag	Hunt rabbit
Hunt stag	(10,10)	(0,4)
Hunt rabbit	(4,0)	(4,4)

Figure 9.1 The payoff structure of stag-hunt game

The stag-hunt game demonstrates a typical case where the coordination problem must be solved to ensure the cooperation. In a stag-hunt game, a player chooses between two strategies: hunt stag and hunt rabbit. Hunting stag requires the cooperation between two players and generates higher return. Hunting rabbit can be done alone but is not so beneficial compared to the cooperative strategy. Given the payoff structure, both strategy combinations (hunt stag, hunt stag) and (hunt rabbit, hunt rabbit) form Nash-equilibrium. Hence, a problem of equilibrium selection arises. (Hunt rabbit, hunt rabbit) is advantaged on account of its risk-dominant nature. Moreover, if we extend the model into a n-person one, the free-rider problem may arise because a player may want to share the output of stag-hunt and acquire an

additional income by hunting rabbit himself as long as his shift in strategy has little effect on the payoff of stag-hunt and would not be detected. The institutional inertia appears when the risk-dominant strategy dominates the n-person stag-hunt game. First, the more players are involved in the game, the more stable the equilibrium is. In a two-player game, if one player changes the strategy by mistake, the shift in equilibrium may occur. But in a n-person game, the action of individual player is of less importance. Since an institution affects a large group of people, it is a n-person game by nature. And the coordination cost rises significantly with the expansion of the group involved in the game. Moreover, the departure from the risk-dominated equilibrium might be beneficial for the individual players as long as their shift in strategies is not subject to punishment. But the departure from a risk-dominant equilibrium is absolutely irrational.

Therefore, the change should be sought beyond the constraint imposed by the stag-hunt game. In general, there are two ways to make the shift from the old institution. The first one is endogenous. The economic system undergoes an environmental change and thereby the payoff of playing the strategy in equilibrium decreases so much that individuals cannot afford to play it anymore. A good example is the replacement of collective farming with household farming. During that period, the poor productivity of collective farming provides the households with the incentive to carry out the reform. But even in such a situation, the peasants demanded the contract with blood handprints as a commitment to the collective action. The second one is exogenous. An external shock can also make the economic system depart from the original equilibrium. As for the Chinese economy, the foreign economies are the sources of such shocks given its increasing integration into the world economy.

Roland (2004) proposes a classification of institution into “slow-moving” and “fast-moving” institutions. By “slow-moving” institution he refers to the “culture” institutions including values, beliefs and customs. And “fast-moving” institution is primarily the political institutions. He argues that the interaction between “slow-moving” and “fast-moving” institutions is key to the understanding of institutional change. His work shares the same interest with the current study. Indeed, the “fast-moving” institution is not necessarily limited to the institution so termed in this dissertation. An example of a “fast-moving” institution is China’s reform policy, which is a state planning for the market. In a short time, Chinese leadership decided to replace the centrally-planned system with the market system. It is “fast moving” because the political authority can push the decisional change in a large step. An example of a “slow-moving” institution is the transition from the rule of relation to the rule of law. Such institutional change is not driven by the decision of an individual political authority. Actually, it is not possible for the authority to make the decision like that. Without the precise instructions and guidance, the institutional change of that sort takes a much longer time. The change takes place usually due to the competition between two different cultural groups as the culture, due to its self-generating and self-sustaining nature, shows a high degree of stability, a feature

also indicated by Aoki's concept of institution. But the "fast-moving" institution may not be self-sustaining, particularly in the long run. In some cases, it will be hindered by the Polanyian counter-movement and thus become ineffective. From an endogenous view of institution, the "fast-moving" institution may not be identified as institution.

Nevertheless, Roland's classification inspires further studies. The current analysis uses the terms "centralized decision" and "decentralized practice" to capture the nature of "fast-moving" and "slow-moving" institution. An institutional change in relation to the "fast-moving" institution takes place in terms of centralized decision. Hence, the change is fast, intended but sometimes subject to failure. The policy itself cannot produce the institutional resources. It only imposes or removes constraints on the use of the institutional resources. On the contrary, the "slow-moving" institution is developed upon the "decentralized practice". There is no central authority to coordinate and instruct the practices. In fact, it is not necessary to have one if the institution is to be established through the "decentralized practice". The institutional change in relation to "slow-moving" institution is thus slow, not-human-devised and adaptive. Moreover, unlike the policy which merely serves as a signal, the culture is itself a sort of institutional resource. Once the institutional constraint is removed through a decisional change, the power to push the change of slow-moving institution is unleashed. There is one more point worth attention. Not all the political decision leads to the expected institutional change. Affected by the social counter-movement, the policy may have different consequences. The ideal situation is that the political decision also take the social counter-movement into consideration and makes room for such movement.

The success of China's economic reform, in particular the liberalization of the market, can largely be ascribed to the interaction between "fast-moving" and "slow-moving" institution. First, a centralized decision on liberalization of the market was made by the political authority. After the institutional constraint has been removed, the "slow-moving" institution was shifted toward a new equilibrium and, as a result, the market economy was embedded in the relational culture. As the experience of the first phase of transition suggests, the transition from the relation-based to the rule-based governance should also involve the interaction between the "fast-moving" and "slow-moving" institutions. First, the transition was started by the opening-up policy, which allowed China to participate in the globalization process. After China's entry into the global value chain, the rule of law ideology began to challenge the domination of relational culture in the domestic market. As long as the domestic market is tightly connected with or even made an inseparable part of the world economy, the rule of law ideology continues to penetrate the domestic market with the superior economic power bolstering from behind. It is noted that the change of slow-moving institution involves an evolutionary process. To put it more precisely, it is not assumed that the incumbents change their philosophy of doing business even under the influence of the distinctive culture. Certainly, a learning process could

accelerate the incumbents' adaptation to the new culture. But it takes time to learn. It is more likely that the new entrants outcompete the incumbents quickly thus increasing the proportion of the distinctive cultural trait among all the economic actors. They choose the rule of law because it brings the higher benefit for them given the constraints they face. By introducing the evolutionary idea into the modeling of the institutional change, we are able to study the dynamic process of transition.

9.2 The Opening-up Policy, International Trade and Foreign Investment

Before proceeding to the theoretical section of this chapter, the attention will be drawn firstly to the so-called "external shock" without which the shift in culture is not possible. Looking at the history, Chinese culture used to dominate in the region and the inflow of different ideas might have enriched the Chinese culture but never affected its nature. After the Industrial Revolution, the Western culture was diffused over the world through trade and force. For the Imperial China, the Opium War was a turning point marking the massive invasion of the Western culture. The May 4th Movement in 1919 was the first wave of ideological shift, forming a severe challenge to the Chinese ethical thoughts. However, the movement had been interrupted by civil wars and the Sino-Japan War. Hence, the relational culture continued to persist. The second wave of attempts to eradicate the influence of traditional culture was the Cultural Revolution in the 1960s. Yet it failed to accomplish the goal and the relational culture persists into the reform era.

Now the third wave is on the way. With the opening-up policy having been implemented for last three decades, the Chinese market becomes increasingly integrated into the world economy and thus is notably influenced by the rule of law characteristics of the capitalist economies. And the tighter the Chinese relationship with the rest of the world is, the bigger the influence is. In general, the foreign-related economic activities can be categorized into two ways. The first one is the international trade which refers to the exchange between residents and non-residents. Apart from the market factor such as demand and supply, the institutional factor is also essential to the success of international trade. There must be an institution governing the contractual relationship among the parties. At this point, the issue of institutional choice rises. And it depends largely on the bargaining power of the parties. As the new entrants in the world market, Chinese firms possess obviously less bargaining power than their Western counterparts. Hence, the rules governing the transaction would be those formulated by the Western side. It is expected that the Chinese firms are forced to accept the rule of law if they want to take advantage of the trade with the Western world. Hence, they are bound by the rule of law in the world market and by the rule of relation in the domestic market. As previously mentioned, the relation-based governance minimizes the transaction cost to ensure the operation of market when the market is too small and segregated to afford the cost of the rule of law. And the relational culture persists because the coordination problem associated with the culture cannot be easily solved. On the other side, the capitalist countries urge the

Chinese government to develop a fair and efficient environment to prompt the trade particularly after China's entry into the WTO. Still, the international trade helps to some extent to change the way the domestic market operates. Since a whole chapter has been devoted to the study of international trade, this chapter will not extend the analysis and will instead focus on other consequences of the opening-up policy.

The free flow of resources is not restricted to the transfer of goods, but also includes the flow of capital. So the second consequence of the opening-up policy is the rising volume of foreign investment. With the political barrier removed, foreign firms are permitted to make investment in China. And they enter into the domestic market motivated by the opportunities to exploit the benefit of cheap labor. Unlike international trade, the setup of local branches of multi-nationals influences the indigenous business culture in a more profound way. These multi-nationals employ local workforce, negotiate and cooperate with local vendors, suppliers and distributors, and work closely with local governments. So the foreign investment provides a larger and broader platform for the communication between two different cultural groups compared to the cross-border trade. As for the multi-nationals, they have two approaches to handle the communication. The first approach is to act as a part of the local community sticking to the relational culture. The second approach is to change the environment they plan to settle down in. Obviously the second approach is more convenient and beneficial to those who look for market opportunities around.

To protect the property right of capital and to realize a reasonable return on their investment, the multi-nationals would make the effort to create a desirable institutional environment. On the one hand, they put pressure on the Chinese government to turn the domestic market into a business battlefield with the rules transplanted from the international market. As mentioned in the previous chapter, the Chinese government engaged to develop a legal system in the modern sense. The major problem was the lack of attention to the formal means of governance. Though the organizational resources were made available, the common belief was not to be easily established and shifted. However, with the inflow of foreign capital which seeks the protection by the formal institutions, more attention will be drawn to the rule of law as a governance mechanism. Therefore, in a networked environment, the foreign capital forms an attraction basin for the rule-based governance and brings the idle institutional resources into utilization. To deepen the understanding of the role of foreign investment in China's industrialization and transformation, it is necessary to investigate how China's policy in relation to the foreign capital has changed over time. This will be the focus of the following part.

China's policy towards foreign investment

The following sets out to address the question as to whether the foreign capital could affect China's business culture. There may be a number of reasons why it would not have. First, it may not be necessary for the foreign investors to make the effort to

create a business environment that they find adequate. Second, the size of foreign capital may be not sufficiently large to affect the Chinese market. Third, the influence that the foreign capital wields may differ across sectors and regions. To clarify the issues, it is helpful to examine China's experience in relation to the foreign capital first.

At the beginning, the Party's foreign policy was pragmatic-oriented. In a conversation with an American journalist, Mao Zedong expressed a positive attitude toward the foreign investment. He acknowledged that a significant volume of capital was needed to accelerate China's industrialization. Thus he proposed that China and the USA could develop a partnership, at least in the commercial aspect (Guo, 2008; Yin, 2006). For the Party, the difference in the ideology was not the primary obstacle to the economic cooperation with Western countries. However, the foreign policy of the USA was largely based on the ideology not on the economic interest. As a result, a mutually beneficial economic relationship did not come into being between China and the USA. With the door to the Western world closed, China turned to seek support from the Soviet Union.

At that time, the largest source of foreign capital for China was the Soviet Union. The relationship between China and the Soviet Union was purely political with the FDI serving as a political means. On the part of the Soviet Union, it aided the development of Chinese economy on the account of China's reciprocating political support. Also, a rising China could be made a threat for enemies such as the USA and Western Europe. On China's part, as a poor country, the technologies, professionals and materials were urgently demanded. At least, the Soviet Union and other Eastern European countries were considered as being able to promote and facilitate the industrialization in China. On China's request, China-USSR Oil Corporation was formed in March 1950. Following that was the founding of China-USSR Ship Construction Corporation. Afterwards, more joint ventures were set up to transfer the technologies and capital to China's industrial sector, ranging from the oil industry, the communication industry, ship construction, automobile manufacturing to the military industry, though the power behind the capital flow was the political benefit and not the economic benefit (Long, 1984; Yu, 2002; Xu 2011).

The economic cooperation was ceased as soon as the political climate changed. During the 1950s, the relationship between China and the Soviet Union was frozen. As a response to that change, China adopted an independence strategy. Also, at that time, the radical interpretation of Communism gained currency. And the "independence" policy was thought to capture the true nature of the Communism. In 1972, Chinese government announced that "China neither needs the foreign investment nor invests overseas." In 1974, the Ministry of Foreign Trade repeated the "shut-down" policy towards the trade with the outside world. Hence, during the 1960s and the 70s, China only imported some equipment necessary for the industrialization not yet manufactured by domestic factories (Yu, 2002; Yin 2006; Xu 2011). The

picture was like that China was a boat floating in the ocean, without seeing any other boat nearby.

By the end of the 1970s, that political movement came to an end and the economic development was made the priority on the agenda. China opened up the door to the world again removing the barrier to market entry for the foreign capital in a slow and phased manner. The Joint Venture Law enacted in 1979 finally legitimized foreign contribution to domestic firms. In addition, a specialist government body, the Foreign Capital Committee, was set up to regulate the foreign investment and the operation of foreign-invested firms. As mentioned earlier, the opening-up policy was started as an experimental program and was restricted to the special economic zones. Because of the notable contribution of foreign capital to the economic growth, the policy was expanded to be applied to the entire nation in a short time.

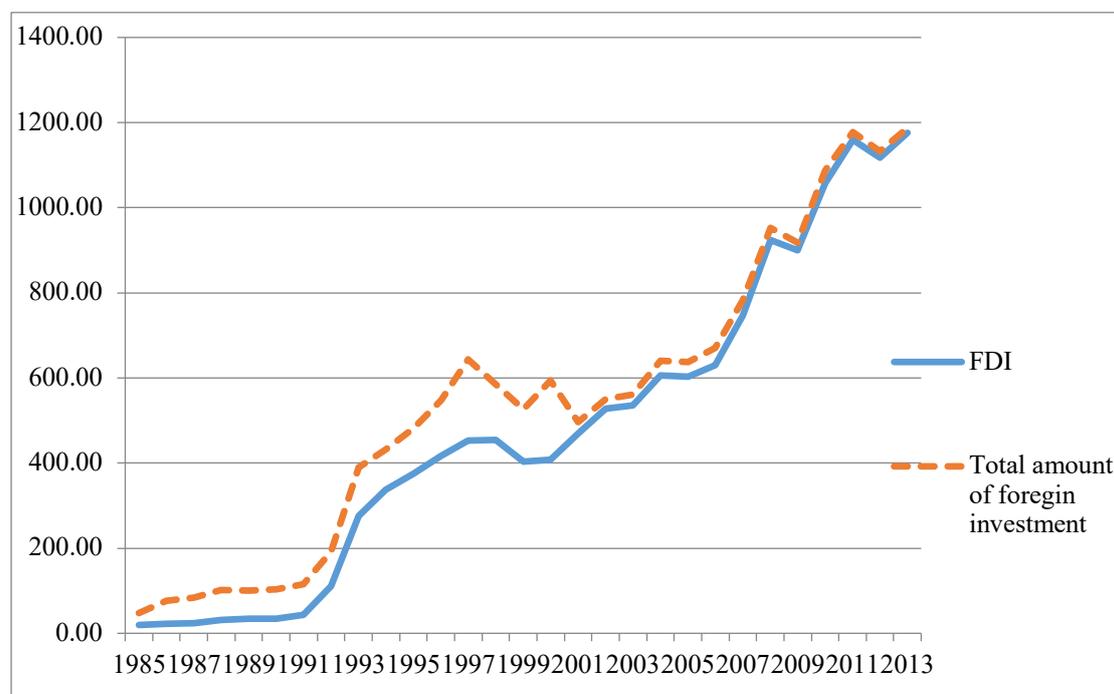
At the early stage of development, foreign capital was rewarded by tax refund, tax abatement and fiscal subsidies. Foreign capital was thus preferred over the domestic one because the former had a spillover effect. With the influx of foreign capital, the technologies and business models were also brought to China and even the market share of Chinese products was enlarged. However, during the 1980s, the multinationals over-estimated the risk of investing in China. In fact, the amount of foreign debts increased faster than the amount of FDI. The multinationals estimated a high risk on ideological grounds. The economic interest provides a motivation but the political risk was not negligible. It was not surprising that the foreign investors might be deeply concerned for risks such as confiscation. At this point, the Confucian culture played a positive role. The investors of the so-called “ethnically Chinese economies” (Huang, 2002) were first to contemplate the entry into the Chinese market. Similar cultural background reduced the communication cost and enhanced the confidence of investors. Moreover, the information was renewed and updated timely for the investors from Hong Kong, Taiwan and Singapore through the personal relationship they had with residents of Mainland China. On account of shared cultural background, pursuing the maximum monetary return to the investment, though, the investors from Hong Kong, Taiwan and Singapore tended to respect the indigenous relational culture instead of replacing it with the extensive order of the market.

In fact, the contribution of the “ethnically Chinese economies” accounted for the majority of the FDI inflow to China. Among them, Hong Kong was ranked number one. According to the statistical yearbook of 2013, 62.4% of the FDI inflow came from Hong Kong. But we should not think that all the capital was produced there. Indeed, many multinationals had regional headquarters in Hong Kong and invested via the regional headquarters. Hong Kong was a good place to manage the investment to China on account of its low tax rate, excellent financial service and close location to Mainland China.

As the reform progressed, China’s policy became stabilized and transparent to the

Western world. The ethnically Chinese economies played an intermediary role liaising between China and the world. The foreign firms identified that China's economic transition offered a rare opportunity and the economic reform was largely independent from the political issues. Hence, they decided to invest in China. The FDI inflow rose rapidly indicating that China was among the best investment destinations in the world. On the one hand, the cost of manufacturing was comparatively low whereas the quality of the manufactured products was acceptable. On the other hand, the potential of the domestic market was also very attractive for the adventurers (Dunning, 2002; Dunning and Lundan, 2008). So the newcomers, aiming to seek the market opportunities yet unfamiliar with the relational culture, were motivated to force the Chinese government to change the rule of the game.

The history of China's experience in relation to foreign capital shows that the foreign investors were provided with the incentive to change the indigenous business environment. The attention needs to turn towards the size of the foreign capital next and see if it is sufficiently large to affect the local institutions. The following graphic illustrates the increase of foreign investment over the last three decades. As the figures indicate, FDI was the major form that the foreign investment took. After China's participation in WTO, the FDI was almost the unique way to use the foreign capital. There were two reasons. The first reason was China's commitment to the liberalization of industrial and service sectors for foreign capital. The second reason was the exit of the state from the economic domain. The amount of foreign capital used by the government declined sharply. On the contrary, the firm-level cooperation rose to a new level.



Source: Chinese statistical yearbooks

Chart 9.1 The Growth of foreign investment and FDI in China

As Chart 9.1 suggest, the annual value of the inward FDI has been tripled since China's entry into the WTO in 2000, rising to approximately 120 billion dollars in 2013. Though indicating a booming increase, compared to the domestic investment, the foreign participation in domestic industries remains low. It seems that the foreign capital could not profoundly affect the system. But two points are worth discussion. First, the local governments paid considerable attention to the spillover effect of FDI and were willing to pay for it even in a highly competitive environment. Hence, various preferential policies were implemented to attract the FDI. As long as the domestic capital remained silent about the business environment, the continuous effort of foreign investors to change the institutional setting would result in greater achievement. The other point is that the magnitude and the density of FDI were different across the regions. The FDI sought the highest return and tended to flow to the urban areas where talents, infrastructures and materials were better supplied. A good example is that the magnitude of FDI attracted by Shanghai was approximately 18 billion dollars in 2013. One city took away 15% of the FDI cake of the country. According to the statistics of 2013, the contribution of the foreign-invested firms to the annual output of Shanghai was 21%. So the conclusion is that the invasion of extensive order of market was not even across the region. The metropolitan areas and relatively developed areas such as the Yangtze Delta and the Pearl River Delta were more prone to such "cultural invasion". It is worth noting that the concentration of the inward FDI increases its influence on the local economy and thus enable it to participate in the determination of institutional settings. On the contrary, an even distribution of the inward FDI across the regions would probably result in an inferior position for the foreign investors to negotiate with the Chinese government and commercial partners.

Moreover, the FDI inflow is characterized by not only the regional concentration but also the sectoral concentration. By the end of 2013, almost half of the inward FDI went to the manufacturing sector. With the booming of the real estate market, the foreign capital also increasingly participated in real estate development. Besides, multinationals like to invest in the wholesale and retailing sector, which implies the strategy to occupy China's big domestic market. In recent years, the multinationals slowed down the pace of investment in the manufacturing sector as a response to the increasing labor cost. Meanwhile, the investment in commercial services sector and the R&D sector increased. The cost of talents in China is still quite competitive. And the service market has been growing continuously.

Last but not least, as the FDI inflow rose by a factor of three, China's regulatory policy in relation to the foreign participation in domestic industries also underwent a significant change. At the early stage of the reform, the regulation focused on the operation of foreign-invested firms. The policy was to some degree a contradiction in itself. In general, the foreign investment was encouraged through preferential policies. Meanwhile, the tight control was imposed on them. For example, the regulation was

extended to include the appointment of the general manager of joint ventures. During the 1990s, the attention of the regulator shifted from the corporate operation to the market access. In the recently established “China (Shanghai) Pilot Free Trade Zone”, the “negative list” for foreign investment was published for the first time, which simplified the regulation over foreign capital to a great degree. In the “negative list”, mapping, transportation, media and some financial services which are thought to be related to the national security or national interest, are not liberalized for the foreign firms. And the access to some less competitive industries such as aircraft manufacturing and automobile production are also limited. Obviously, Chinese government wants to achieve balance between opening-up policy, industrial policy and stability.

9.3 Modeling the Coexistence of relational culture and extensive order of market: An Evolutionary Approach

This part will shift the focus from the specific case to a theoretical model. What has been discussed above in relation with the inward FDI will be incorporated into the model. And the theoretical model serves two purposes. First, it is a better way to capture the fundamental factors underlying the change of slowing-moving institution. Second, it provides an opportunity to gain deeper understanding of the dynamic of the institutional change and enables prediction to be made in relation to the subject.

To model the coexistence of two different cultures, it would be better to incorporate the evolutionary idea. As previously mentioned, it is costly for an incumbent to change its way of doing business. The next generation learns more quickly and outcompetes the old generation before they finish learning the new culture. Hence, it is assumed that the new business culture will not influence the existing firms. The magnitude of influence of an individual culture is solely measured by the number of the entrants with specific trait in the next round of game. So far as the exit and entrance of firms are concerned, the evolutionary model provides a good solution to capture the dynamic of the competitive interaction among different strategies which are considered inherent to the firms.

This model begins with a basic evolutionary game. There are two strategies competing with each other: trade under rule-based governance and trade under relation-based governance. These two strategies are indeed the “cultural traits” in the evolutionary game-theoretic model. It means that an individual player cannot shift from one strategy to the other. The game is infinitely played. N denotes the number of the firms operating in the game. It is not to be changed over time. By the end of every round of the game, M firms disappear from the market and the new entrants of equal number come to fill the vacancy. It is analogous to the birth and death in the biological model which the evolutionary game theory is originally applied to. The new entrants choose the strategy that brings higher return and remain playing it as long as they survive. The following table shows the payoff structure:

	Relation	Rule
Relation	(b, b)	$(\beta b, \beta b)$
Rule	$(\beta b, \beta b)$	(a, a)

Figure 9.2 The payoff matrix of the evolutionary game-theoretic model

The benefit of trade under a relational system is, as indicated in the figure 9.2, b . This value is assumed to be fixed because the magnitude of cooperation is limited under the relational system. The benefit of trade in a “rule of law” environment is a and increases as the number of the firms whose actions fit into the “rule of law” framework rises. And in this model, it is assumed that intercultural interaction is possible. The firms that follow different cultural patterns can do business with each other and receive a payoff of βb . The parameter β , $0 < \beta < 1$, measures the communication difficulty in association with the intercultural interaction. Because the fixed cost of the “rule of law” system is significantly higher than that of relational system, it is less costly for the firms that are accustomed to the extensive order of market to learn about the characteristics of relational culture. In the case of $\beta=0$, the game will be reduced to a simple one, in which two cultural groups do not communicate with each other and the size of group alone determines their performance.

In the evolutionary model, the cultural traits compete for survival. The probability of survival depends on two factors. One is the payoffs which have been already discussed. The other one is the distribution of the cultural traits. As to the model presented here, firms that prefer the personalized transaction are termed relation-developers and firms that are more satisfied with the impersonal market are called rule-takers. The first round of the game determines the sequential evolutionary dynamic of the model. Let λ_t denote the proportion of rule-takers at t th round of the game and $1 - \lambda_t$ the proportion of relation-developers at t th round of the game. Given the payoff structure indicated in figure 9.2, the condition under which the rule-takers prosper is as follows:

$$\lambda a + (1 - \lambda)\beta b > \lambda\beta b + (1 - \lambda)b \quad (1)$$

Because the time factor is irrelevant, λ_t is generalized into λ . Then the inequality (1) can be put another way:

$$\lambda > \frac{(1-\beta)b}{a+(1-2\beta)b} \quad (2)$$

The inequality (2) shows that, when the proportion of rule-takers exceeds $\frac{(1-\beta)b}{a+(1-2\beta)b}$,

the personalized transaction would run out of fashion. It is clear that the rising a and declining b facilitate the duplication of cultural traits of rule-takers. What may interest us is the parameter measuring the cross-cultural interaction difficulty, β . If $\beta = 0$, we have a conventional inequality $\lambda > \frac{b}{a+b}$ illustrating the condition for the survival and prosperity of the different species in the evolutionary dynamic model because cooperation is not possible across the species due to the prohibitively high cross-cultural interaction cost. Yet the opening-up policy reduces the cross-cultural interaction cost and it should be taken into account as long as we deal with the human-devised modern economic system. The plan here is to conduct a comparative analysis by establishing the relationship between λ and a with different value of β , which is denoted by β and β' and $\beta > \beta'$ (Communication cost decreases

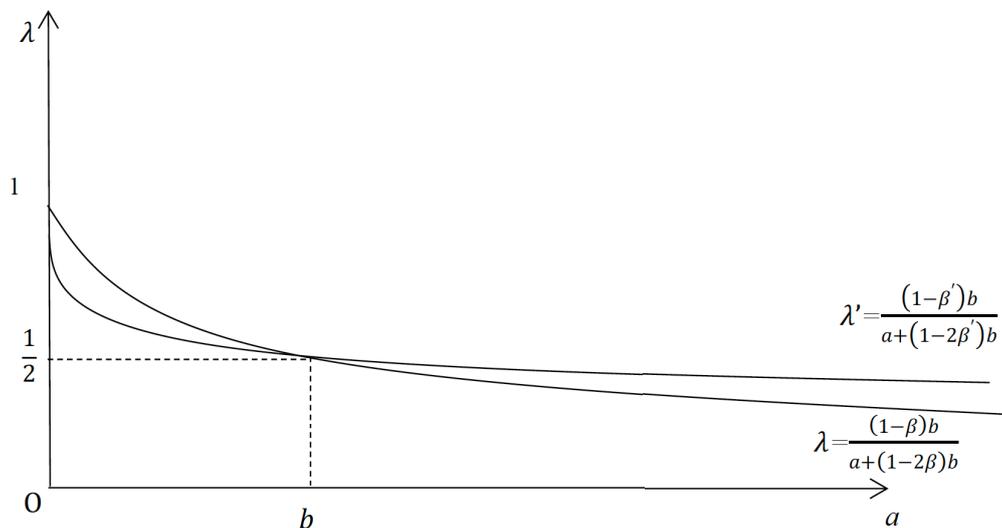


Figure 9.3 The relationship between λ and a with different value of β

Two features of the function $\lambda = \frac{(1-\beta)b}{a+(1-2\beta)b}$ need to be mentioned. First, since $0 < \lambda < 1$, $a + (1 - 2\beta)b > 0$ and $\beta < a/b$ must hold for every possible combination (a , b). The second feature is essential to the dynamic analysis of the model:

$$\lambda \begin{cases} > \lambda' \text{ if } a < b \text{ and } \beta > \beta' \\ < \lambda' \text{ if } a > b \text{ and } \beta > \beta' \\ = 0.5 \text{ if } a = b \end{cases}$$

It means that, if the benefit of being a rule-taker is lower than that of being a relation-developer with respect to the individual exchange with like players, the proportion of rule-takers in the population needs to be increased to approach the threshold value in the case that communication is getting easier and less costly. In order to prosper, the rule-takers like to decrease the communication cost and

cooperate with relation-developers as long as the benefit generated from the cooperation among ruler-takers is lower than that among relation-developers. Reversely, if the benefit of being a rule-taker is higher than that of being a relation-developer, the threshold proportion of rule-taker in the population increases in the case of declining difficulty of intercultural communication. The rule-takers try to avoid the cooperation with relation-developers and benefit more from the exchange with the like players.

This implication seems anti-intuitive at first glance. The key point is how to interpret it while putting it into the big picture that the model attempts to illustrate. Indeed, the explanation lies in the payoff structure. The likelihood of encountering the like player should be high for the rule-takers so that they can prosper despite the lower payoff of their chosen strategy. And provided the rule-takers form the majority of the population, the low communication cost is more beneficial to the relation-developers as they are able to earn more income by trading with the majority group. On the contrary, the high communication cost prevents the intercultural interactions and excludes the relation-developers from the trade network of the rule-takers. It will be a bigger loss to them than to the rule-takers. So, if a strategy is adopted by the majority of the players but brings lower payoff, those who adopt this strategy should exclude the players who choose the other strategy from their trade network to make the rivals suffer more than they do.

If the likelihood of encountering a like player is low for the rule-takers, at least lower than 50% and, incidentally, the payoff of their strategy is higher than that of the strategy chosen by the relation-developers, which means that the rule-takers has still a chance to prosper, it is better for them to work with the relation-developers. The reason is exactly the same. But this time the rule-takers do not discriminate between different cultural traits. What they ought to do is to reduce the communication cost and maximize the benefit generated from the intercultural interactions. To sum up, if a strategy is adopted by the minority of the players but brings higher payoff, those who play this strategy should play with those who choose the opposite strategy and endeavor to smooth their cooperative relationship. Certainly, the factors affecting the evolutionary cultural pattern such as cross-cultural interaction difficulty is determined in the model. What we discuss with respect to players' strategy is based on the relaxation of the assumptions. If these factors are subject to change, the players can be better off adopting certain strategies.

The findings above are important to the further analysis. But for now we turn to the comparison between the model and the reality. In an evolutionary model, the equilibrium is quite stable if only one cultural trait is involved. It means that the entire system remains what it is over time if $\lambda_1 = 0$. And if $\lambda_t = 0$, the relational culture dominates for the sequent rounds following up to the t th round. In the narrative analysis above, it has been indicated that the common belief may form a major obstacle to the institutional change. But in the model, the common belief is turned

into the cultural trait that will not be changed for individual player once determined. The assumption is not absolutely true for the reality but is reasonable for the simplification purpose. Given the assumption, the model predicts that China's economic system is not to be changed until its integration into the world economy.

But the model is not designed to explain how Chinese economy became an inseparable part of the world economy. The international trade and FDI inflow is exogenous to the model. As previously mentioned, the international trade and FDI inflow were strongly driven by China's competitive advantage in labor cost. Given China's integration into the world economy, the initial state of the model should be illustrated by $\lambda_1 > 0$ and $a > b$. And the concept of geography is to be introduced into the model. It implies that the distribution of different cultural traits is not even across the regions and the likelihood of encountering a rule-taker or a relation-developer is therefore not the same across the regions either.

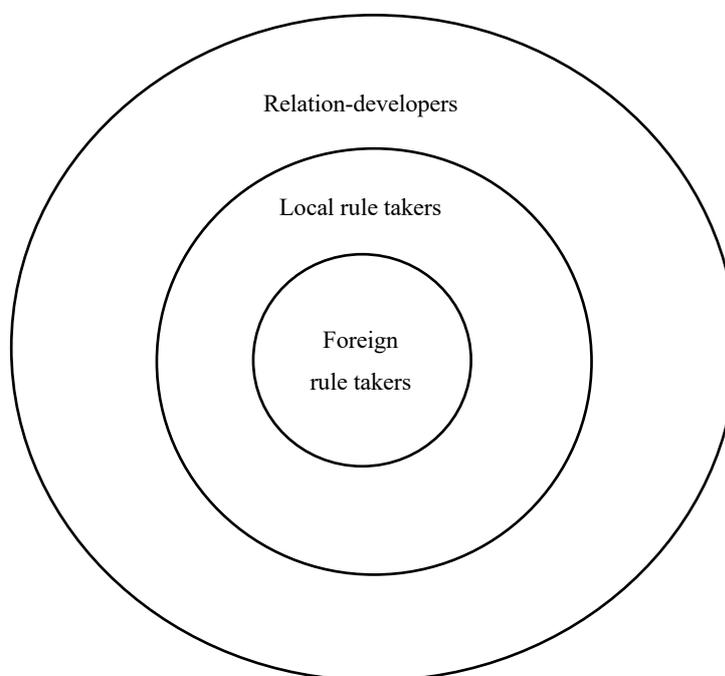


Figure 9.4 An illustration of the distributive structure of two cultural traits

The foreign-invested firms, according to the way they are organized, are rule-takers. They trade mostly with the affiliated firms overseas. It means that the transaction does not take place between two players who meet randomly. The players identify the type of the opponents and decide if they cooperate or not. Because the foreign-invested firms operate as a part of the world economy, their business capacities are fully occupied by the foreign demand. And since the profit provided by the integrated global value chain is enormous, they have no reason to develop the local market. Moreover, as Figure 9.4 indicates, the foreign rule-takers agglomerate in the metropolitan areas and relatively developed regions to share the better infrastructure

and information. There is one more advantage. If they lobby the local government for a better business environment, the newcomers will settle down in the city where the investment facilitation is already provided. Their survival does not depend on the intercultural interaction but solely on their association with the world market. They are invaders but the aim of invasion is to make use of cheap labor and not to increase the share of local market. Further, to these foreign rule-takers, β is low if not equal to 0 because the foreign-invested firms are organized in the same way as the multinationals.

Now the question is how local firms react to challenges and opportunities provided by the opening-up policy. Introducing the geographical factor into the model allows the foreign rule-takers to agglomerate and thus divides the local firms into two groups: the firms neighboring to the rule-takers (they face a high value of λ) and those located remotely (they face a low value of λ). As indicated by the graphic above, λ decreases from inner to outer circle, termed in this analysis as the effect of geographical distribution. Certainly the location and the concentration play an important role. But in reality, there might be some other cost that also affects the choice of strategy. For example, some TVEs, though being located remotely from the urban area, participated actively in the international trade and thus were also influenced by the idea of impersonal market. Furthermore, there is no assumption of continuity in λ . Instead, for the purpose of distinguishing the two, a high and a low value of λ is used to label two types of firm. The second circle illustrated by the graphic above separates these two groups. As the value of λ is positively related to the benefit of being a rule-taker, the firms located between second and third circle, which indicates a low value of λ , choose to follow the relational culture.

On top of the opening-up policy, the transition from the centrally-planned economy to the market economy also affects the evolutionary dynamic of the coexistence of business cultures. The opening-up policy allows the concentration of rule-takers in a networked environment, thus initiating the shift in equilibrium, while the institutional transition separates the economic actors into two groups. The non-state sector relies on the market, the self-finance mechanism and the informal network that channels resources. On the contrary, the state-sector survive on the guard and support of government. At the early stage of the transition, establishing the link to the state-sector means being privileged. And new entrants sought eagerly the opportunities to be linked to the state-owned sector and government that controlled a significant section of the economic system for the institutional link to the state actors provides the access to various resources. However, not every new entrant could join the privileged group. Indeed, to preserve the privilege for its participants, the group is closed to most of the entrants. Hence, the privileged group features a high value of β . Meanwhile, inside the group, they follow the relational culture and develop the network to share the benefit derived from the privilege. And during the early stage of transition, the privilege was of great value so that b outweighs a .

It is the Party's policy to transfer the resources to urban areas to accelerate the industrialization. Hence, the privileged state sector operates largely in the urban area. The entrants need to choose between two sides. However, due to the limited access to the privileged network, they have little chance to establish the relationship but end up facing a high value of β . So most of them are forced to accept the Western business rule and trade with the foreign-controlled firms. Moreover, as mentioned earlier, the foreign investors, to ensure their return on the investment in China, continue urging the Chinese government to improve the business and investment environment. The so-called "improvement" refers to the convergence towards a unified system governed by the rules of capitalism. Because the privilege of the state sector is not protected by the formal institution but by the specific policy or the way of implementing the policy, the government can fulfill the request of the foreign clients without hurting the interest of the privileged group. So the shift in institutional environment takes place as the result of the invasion of foreign capital. There is one more reason, though not reflected in the model, for the entrants to choose the capitalist order to follow. The model also suggests the advantage of rule of law. Because the situation in urban area satisfies $b > a$, λ falls as β rises. In that regard, the limited access to the resources controlled by the privileged group makes the diffusion of rule of law ideology easier. A lower degree of concentration is required to meet the condition set by the value of λ .

So the rule of law thrives first in urban areas. In rural areas, λ falls to a small value so that the new entrants prefer to carry out the transaction in a personalized way. But the increase of number of rule-takers has two effects that may cause a shift in equilibrium for the outer circle in the graphic above. The first one is the increased value of λ . The second one is the improvement in specialization and therefore a positive effect on the payoff of being-a-rule-taker strategy. Meanwhile, b is lower for the relation-developers in rural area who have little access to the state-run economy. So the income gap between the rule-takers and relation-developers are widened. Moreover, it seems that β is not prohibitively high, especially when the transaction occurs between two local firms. In the case where $a > b$, λ needs not to be bigger than 0.5 to ensure the domination of the rule of law ideology. Further, it falls with the increase in the value of β . The active intercultural cooperation helps the rule of law system to prosper. Thus it is expected that the rule of law ideology spread from urban to rural areas. Even when the new entrants meet the rule-takers with a possibility lower than 0.5, it is still beneficial for them to become rule-takers on account of the increasing payoff and the additional benefit generated from the intercultural cooperation.

The role of international trade is worth mentioning. The firms focused on the international trade need to learn the business rules governing the market transaction. Meanwhile, they also develop a local network to share market information, excessive production capacity and self-created liquidity. It is evidenced by trade across different cultural groups. If the foreign demand declines due to the rising labor cost, these firms

seek opportunities to cooperate with the local rule-takers. And the domestic market can thus be further integrated to improve the average output.

The analysis above comes to three conclusions. First, the opening-up policy forms a shock to the relation-based trading system and initiates the transition from the rule of relation system to the rule of law system. Second, the geographical distribution of different cultural groups is essential to the cultural transition. The concentration of rule-takers in the urban area allows them to prosper in a networked environment. They also endeavor to create an institutional environment favorable to the operation of the impersonal market. Eventually, the rule of law ideology spreads from the urban area to the rural area where the relational culture is deeply rooted and difficult to be eradicated. Third, the trade across two cultural groups helps the rule-takers to survive and make it easier for them to prosper.

It is predictable that the transition from rule of relation system to the rule of law system is slow at the beginning but will accelerate during the economic growth. If a firm wants to serve the entire domestic market, it needs to be a rule-taker. So the firms, as soon as they can afford the cost associated with the law enforcement, seek the protection from the formal institution, which is also costly, yet still financed by the state. On the other side, they still retain the skill to trade with the relation-developers. Eventually, the rule of law ideology will take over the domestic market and dis-embed the transaction from the relational culture. Consequently, the influence of the Chinese characteristics will be undermined. However, the relational system still persists as long as the personalized interaction is inevitable. But an unexpected technological innovation may reduce the frequency of personalized interaction. The extensive use of the internet in the commercial domain facilitates the impersonalization of market transactions. For example, the online transaction is mostly impersonal. Not only the way people trade changes but also the way people think about trade changes.

Though instituting the rule of law system is a superior strategy to promote growth, the relation-based trading system continues to be a part of the Chinese economy. First, the rule of relation ideology still influences the mind of economic actors because it is difficult to separate the economic activities from other social activities in a small community. Second, under certain circumstance, the cost associated with contracting and law enforcement and financial service is too high for the economic actors. So they circumvent the formal institution and rely on the relational system which offers a low-cost solution. But the first and second points change over time. The most problematic point is the third. As previously mentioned, the state sector is a place where a large fraction of transaction is governed by relations. Its institutional link to the government provides it with a lot of privileges in the economic system. The SOEs are free-riders surviving on those privileges and sharing the benefit of the overall growth that they contribute less to. Moreover, the SOEs pursue the risk minimization instead of profit maximization. Hence, the state sector is not incentivized to make the departure from the current institutional settings. To change the situation, the SOEs

need to be further restructured so that they are no longer shielded by the privileges but bounded by the law.

9.4 From Traditional Network to Developmental Network

What we have discussed so far is about the theoretical aspect of the institutional rivalry. Prior to that, we also have glance at the background of the forthcoming transition. There is one more point still waiting for the elaboration. In the real world, the institutional competition between rule of relation and rule of law does not lead to the complete replacement of one with the other. As the socioeconomic system is structured and layered, the institutional competition occurs at different level. In a mature capitalist system governed by the law, the personal relation still plays a relevant role in, for example, labor market (Granovetter, 1974). Also, in a certain industry, the managers know each other and form a network to exchange information. So the social network persists in a capitalist system where the transaction tends to be impersonalized. In China's case, the rule of law system will be established to some extent but not replace the rule of relation system in total as the incentive structure, the institutional/cultural environment and the magnitude of interaction differs at different level of society. It is highly probable that China develop a mixed economy, as we have discussed in last several chapters, with the Chinese characteristics showing the mixed nature of the economy. Some scholars (Chen, Wu and Xie, 1999; Chen, 1999; Chen and Li, 2004) have already analyzed China's mixed economy. We will further their work and develop some new ideas based on the conclusions of previous chapters.

It worth noting that the market as network would probably degenerate into oligopolies which tend to take control over the market transaction (Vitali, Battiston and Glattfelder, 2011). The rule-takers in the model would also be interlocked through personal network and make use of the so-called "rule" to limit the access to the resources through certain power structure. It is possible that the rule of law system faces a problem of corruption and only intervention from both government and society side can prevent such activities by regulating and embedding the market.

Therefore, in a mixed economy, the operation of market is affected by two forces. One is the government. The other is the social system. In general, the market is embedded in the social system and how it is embedded and to which extent and degree it is embedded is determined by the government policy. Certainly, the social counter-movement comes to undermine the undesirable influence of policy. The government policy is still highly effective and changes the way that market and society interacts. We have discussed that Chinese government shows a positive attitude towards the local institutional innovation. Today, it is still a guideline for how the reform is carried out. As long as the government policy remains unchanged, the interaction between market and society can result in creating a new type of embedded market.

It is better to look at the emerging embedded market from two different viewpoints. One is to see it from the viewpoint of network. How is the traditional network affected by the embedding of market in the social system? As mentioned, the influence of traditional network is undermined as rule of law ideology invades the belief system. But as the model suggests, if the participants involved is small in number and the communication with outer environment is difficult or not necessary, they'd better form a network to deal with the economic issue. As the payoff structure, the cross-culture interaction difficulty and the initial state of belief system differs across the regions and markets, the entire economy shows a mixed character with the different culture governing the transaction in the individual section of the economy.

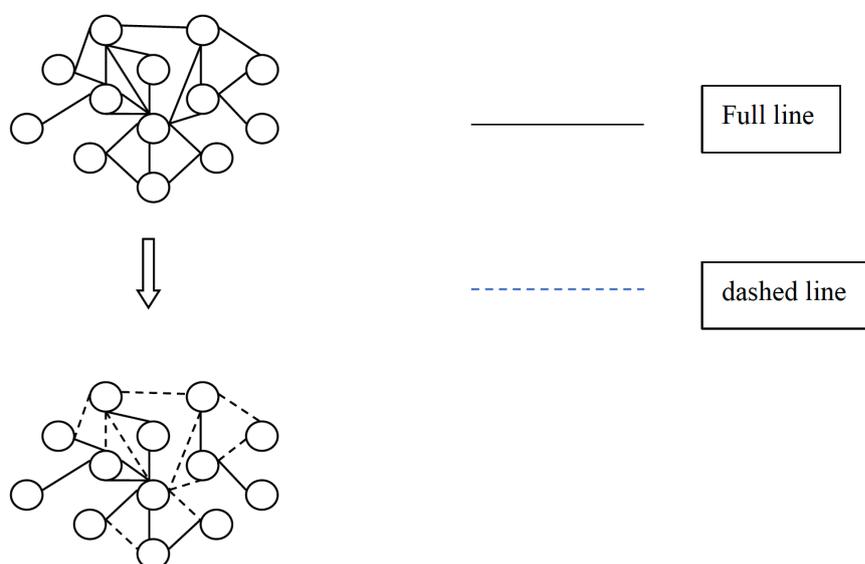


Figure 9.5 An illustration of the transition from the relation-based institution to the hybrid institution

The social structure of networked economy is illustrated in figure 9.5. The relationship between two individuals is either labeled by the full line or the dotted line. The full line denotes to the traditional relationship, which is flexible and cultivated by the two sides while the dotted one is an institutionalized relationship and mainly enforced by the state machine. Without the external shock, China has developed an network structure adaptive to the agriculture-based economy. Though the network is underpinned by the personalized transaction governed by the Confucian norms, the network also features the institutionalization of specific social relation, which follows the philosophy of legalism. The dotted line is not highly flexible as it was regulated by formal rules. But it is available as long as the social infrastructure is set up and social system is in order. What we call the transition is the replacement of the traditional network with the institutionalized network. As there is an external factor, namely, the connection with the world economy accompanied with the invasion of

rule of law ideology, Chinese economy became a mixed economy based on both traditional and institutionalized network. Some relationships which formerly fell within the private sphere now are subject to the formal rules. This part of change improves the efficiency of the economic system because the traditional network is not quite adaptive to the industrial production, which requires high precision and accuracy. But the transition has an end somewhere. A lot of relationship remains what they used to be as they provide flexibility to the economy, particularly to the small embedded markets. These small markets rely significantly on the flexibility of economic relationship and a web of such small markets stabilizes the economic system from bottom up. A gigantic system coordinated in an impersonal manner is more vulnerable to the crisis. The system fails when a section of the so-called global value chain runs into trouble. As we may recall, how the U.S. financial crisis in 2008 caused a recession of world economy.

The part of economy illustrated by the dotted line is a sophisticated, yet fragile system. It is efficiency-improving as it promotes the specialization and production of knowledge, which we have discussed in former chapter. The other part of the economy is the networked markets, usually small-sized and main-knots-centered. We call the combination of these two parts the mixed economy. And how they are mixed in Chinese system is reflected in the Chinese characteristics. As the reform progresses and the Chinese economy becomes more integrated into the world economy, the traditional network is replaced by the rule of law system. A lot of transactions, contracts and economic actions are now governed by the formal rules. This change is a natural response to rise of “Made in China”, rise of China’s huge manufacture sector. And this change also makes the traditional network transform into a developmental network. In the mixed economy, there is still a strong relational culture exerting influence on the economic actions. Hence, the social network still exists and plays a role in coordinating the expectations and actions of individual actors. Particularly, when those who are familiar with both cultures increases in numbers, the benefit generated from the advantage of coexistence of institutions also increase. In that kind of environment, the individual actors can switch from the full line to the dotted line and switch back if necessary, thus making the economic system more flexible and at the same time more stable than a system consisting of pure relation-developers and rule-takers.

One major disadvantage of traditional network is that the underlying social ritual is complicated and costly. It might be necessary for the operation of social network in an agricultural society. But it is not quite necessary for today, especially when the rule of law institution is established. To save the cost, some full lines are turned into dotted lines and the demand on the social ritual decreases and the cost is thus saved. The remaining social network is what we call the developmental network. It is the modernization of the traditional network dropping. The developmental network is complementary to the institutionalized network in some way and also takes the function of social counter-movement to deal with the weakness of market economy. It

provides the public goods such as social security, general financial services and reliable information sources as long as the public service is not available. The issue of developmental network waits further discussion.

9.5 Summary and Implications for Further Investigations

Previous chapters have demonstrated how important the relational culture is to China's transition to a mixed economy and its unprecedented growth. However, as the Chinese economy becomes more and more integrated into the world economy, China is prepared for a second transition, namely from the personal network to the institutionalized network. And the transition is necessary to remove the institutional constraints that deters further growth for an economic system governed by the relational culture is not friendly to the specialization and production of knowledge.

But the institutional inertia slows down the transition if not totally stops it. An institution is not like a mechanical device whose operation requires only the installation. The working of an institution is a dynamic process involving the common belief which makes it a focal point in equilibrium selection. The coordination cost will be prohibitively high when it comes to the shift in common belief. It is nearly impossible to solve the coordination problem unless a shock is given to the original system. As for the Chinese economy, the shock is the opening-up policy. The rule of law ideology comes along the stream of international trade and foreign investment. The concentration of foreign capital, on the one hand, improves the density of rule-takers in the urban area and relatively developed regions; on the other hand, pushes the government to create an adequate environment for the non-personalized trade. Hence, the rule of law ideology prospers first in the urban area and spreads to the rural area afterwards. The conclusion is that, once the system departs from the original equilibrium on account of the external shock, it will, under certain circumstances, move slowly towards a new state characterized by the coexistence of relational culture and rule of law system.

Further studies need to focus on the section of the economy that remains being governed by relation. As mentioned, the traditional network is transformed into two kinds of new network. One is the institutionalized network. This part of network is governed by the formal rules and based on the enforcement of third part, namely, the state in a broad sense. The other part of network we call it the developmental network. It should play a positive role in promoting a sustainable growth and increase the stability as well as flexibility of the economic system. But the network also has some negative effect in China's socioeconomic system. Due to the privilege originated from the institutional link to the government, the state sector is not bound by the rule governing the market transaction. Moreover, the imperfect incentive structure introduces the non-market characteristics to the state sector. Thus the SOEs adhere to the relational culture on the ground that the relational culture defines the common belief of like players. And, as suggested by the model above, they would not break up

the cooperative relationship with the rule-takers. As a result, the economic system would be split into two parts. One part comprises the private sector and foreign sector that operate within the scope of laws and regulations. The other part is the state sector with an underlying social network governing the allocation of resources. Hence, the economic system suffers the problem of “dual personality”. On the one hand, China’s formal institution has been established offering a convenient environment for the market-based cooperation. On the other hand, the state sector ignores the formal institution and regards, instead, the social relation as the primary means to govern the transaction and maintain the cooperation. Besides the state sector, other hierarchical organizations such as government, army also have the same problem. One consequence of network domination is the corruption which can develop into a major obstacle that prevents China from moving towards a sustainable growth. The policy implication is that the Party needs to introduce formal rules to regulate the behavior of individuals in the hierarchical organizations, including the restructuring scheme for the state sector and government bodies as well. The aim is to make the network less effective in such organizations and thus prevent the interest groups from capturing the core part of system. That is what the Party has done recently.

And with “new normality”, a new perspective on the economy, the Party pursues a more balanced and inclusive growth, pay more attention to the interior economy and introduces new success measures besides the GDP. To develop the relational economy on the way to a mixed economy, the Party should use the political power to regulate and stabilize the embedded market. Particularly, the Party needs to develop different policies to regulate the state sector, the non-state sector and the foreign-invested sector, respectively. The aim of the policies is to prevent the economic system from being corrupted in the case of dis-embedding or over-embedding (radical relational embedding) of market. In a mixed economy, the growth should serve the general interest of people but not the interest of a specific class.

10. Conclusions

Over the last three decades, China contributed significantly to the eradication of poverty, transformed the incredible manufacturing capability into various “made in China” products for the world and developed a vast domestic market to ensure sustainable growth in the future. However, at the beginning, China’s transition to the market economy was not expected to succeed. In fact, the success of China’s economic reform is something beyond the scope of preexistent understanding. Hence, a lot of literature has been produced to shed some light on China’s unique experience of transition and growth. This dissertation is part of the academic efforts attempting to incorporate China’s experience and the existing theoretical framework into a new account of the transitional economy and to enrich the economic theory in doing so, particularly the institutional dynamic of transition. So the conclusion will be made with an emphasis on the new ideas that China’s experience introduces to the existing theories.

China’s unique experience in economic development

It is understandable that China’s experience has been bothering scholars. The reason has been given by Karl Polanyi who points out that the self-preserving market is a fallacy. According to him, how market operates is affected by the institutional environment that it is embedded in. The developed countries have shaped a rule-based institutional environment for the rise of capitalist economy. And the neoliberalism derives some lessons from the practice such as privatization and liberalization of market and put them in the central position of economic policies. As influenced by the neoliberal ideology, it is so natural to presume that the market operates in an environment governed by the rule of law, and scholars used to take it as given in the economic models. However, this presumption is not true while applying to a transitional economy. The developing countries may not have prepared an ideal institutional environment prior to the transition. So an institutional blueprint is designed to fit the various needs for transition and growth. Following the blueprint, a set of policies is to be carried out to liberalize the market, privatize the non-private sector and allow the transplantation of the rule of law system. Unfortunately, this kind of international standard best practice is not really the best in practice. The fundamental mistake is to view the transition as a mechanical process. China’s experience shows that the transition is more like an organic process. It is not reasonable to transplant the rule of law system which is adaptive to the mature market system for a transitional economy neither has such institutional resources nor a mature market. An organic process means that the market needs to be embedded in the then-existing social system.

As a result of the embedded market, the Chinese characteristics emerged and played a role in smoothing the transition. Lacking of knowledge and experience, China chose to base the reform strategy on the trial and error. The idea of phased innovation

underlying the gradualist and experimental approach to reform is adequate under China's political system which features decentralization of economic authority while maintaining centralization of Party authority. As part of the gradualist reform scheme, China liberalized the market first and refused to privatize the state-owned sector at the same time. The restructuring of SOEs was saved for the later stage. Hence, the political and industrial elites have little chance to take control over the big firms and monopolize the access to the market, which would petrify the economic system in total. As the big SOEs remained the lazy cat, a non-state sector grew from the very beginning and attracted the resources consistently from the state sector. Moreover, the experimental approach allows the informal institution to evolve from the bottom-up and govern de facto the transactions. As a result of the local institutional innovation, a distinctive institutional environment has been shaped for the transition.

If the rule of law system is not established, the question remains as to how the transaction cost can be minimized to ensure the smooth operation of the market. China's experience suggests a new idea that can be incorporated into the economic theory. As Li (2003) argues, the relation-based governance is an alternative to the rule-based governance. For an emerging market system, the size of the market is not sufficiently large to allow the market participants to afford the high transaction cost incurred by the rule-based governance. In China, the relational culture persists thus preparing a networked environment for the market to be embedded in and underpinning the market system from the bottom up. The examples range from the household responsibility system, the rise of the TVE sector, to the formation of informal financial network. The relational system constitutes the institutional basis for the transition to a mixed economy and support the operation of the market at the early stage of development.

The household responsibility system is considered the first move in the economic reform as it was the first institutionalized practice which introduces the personal freedom in the economic activities. As the household farming was always preferred by the peasants for economic reason and the collective farming preferred by the government for ideological reason, a game was played among central government, local governments and rural households to restructure the collective farming system recurrently. During that time, the ideal model of collective farming was challenged and refined. And finally, with the ideological constraint removed, the household responsibility system, as an outcome of interaction of relational culture and socialist organization, was introduced to improve the efficiency of agricultural production.

Like the agricultural sector, the development of industrial sector was also affected by the networked environment. As a result of non-privatization policy, a number of small non-state enterprises emerged to compete for the share of market. Among them, the TVEs accounted for the major part. They were neither public organizations nor private enterprises. They were household-run businesses, collective firms and cooperatives. They shared a same institutional foundation, namely, the relational

culture and benefited enormously from the operation of various social networks. In the social network, the cadres' entrepreneurial capability and the organizational resources derived from cultural and socialist tradition can be directed to their maximum uses. This development strategy, in contrast to the simple privatization policy, created a competitive manufacturing sector and prepared the foundation for the domination of 'made in China' products in the world market.

Though the TVEs were successful, the traditional social network underlying the operation of TVE sector was not quite adaptive to the increasing size of market. And under the influence of neoliberal ideology, most of TVEs were privatized. Nevertheless, China's manufacturing sector was already a competitive one and was ready to provide the service to the clients all over the world. With China's entry in the WTO being a catalyst, Chinese market started to be integrated into the world market. Thereafter, Chinese economy benefited from both domestic institution and institution overseas. In the domestic market, the relational culture persisted and was used to deal with the transaction issues. But it was not adaptive to the knowledge creation. Such tasks were left to the section of global value chain which as governed by the rule of law institution. China leveraged the institution not available in the domestic market to improve the production efficiency and enhance the specialization through the international trade, which can be called a mechanism of "institutional arbitrage". And this helped China to grow into a considerable economic power.

Unlike the competitive manufacturing sector, China's financial sector was not well-developed. Due to the regulations, only the state-owned banks were allowed to take savings and make loans. Even after part of regulations was removed, the large state-owned banks still dominated the financial market. The problem was that the state-owned banks, on the account of the institutional links, preferred to lend loans to the state-owned enterprises. Private firms, small businesses and cooperatives had little access to the formal financial services. Therefore, they seek helps from the social network which organized the informal financial activities ranging from self-financing, private lending and network-based intermediated lending. The social network is not totally independent. A cross-guarantee mechanism provided the network-based manufacturing cluster with the access to the formal financial services.

In spite of the contribution of social network to China's economic transition, the traditional network has increasing negative effect on the economic performance when the size of economy became larger and larger. Moreover, with the deep integration of Chinese economy into the world economy and the increasing volume of foreign investment, the rule of law ideology also invaded the sphere of China's business culture. Now the rule of relation and rule of law institutions competes for the dominance. Under certain circumstance, which is probable the case in China, the rule-based system takes over some areas which was formerly governed by the relational culture. This change may improve the operation efficiency of the economic system. But the replacement is not overall. The remaining part of social network

would be turned into a developmental network, which provides the flexibility to the economic system and stabilizes the system making it less vulnerable to the fluctuation.

The contribution of China' experience to economics and the policy implications

As summarized above, China's experience is unique. It gives some lessons to those countries which are still trapped in the poverty and pursue a successful transition and to those which are afflicted by poor economic performance. Also to the scholars, China's practice is of theoretical importance and may enrich our understanding of the embedded market. From what China has done we find following points which invites further elaboration.

First, we view the market as the embedded market, not the self-preserving market. In the neoclassical economics, the institutional environment surrounding the market receives little attention. It is always assumed that the market operates in a rule of law environment and the institutional cost is not taken into consideration. That is why the neoliberal economists recommend a reform package containing the mechanic policy tools such as privatization, liberalization of market and rule-based governance. However, some of these strategies are too costly for a transitional economy. And some would lead to structural problem petrifying the economic system and make the next step of reform impossible. Policy-makers must have a look at what is available there and where they are going to start. As suggested by China's practice, a decentralized institutional innovation, which is tested by an experimental approach, is a good way to avoid high risk. The transition involves high dynamic complexity. So it is better to allow the institutional change be pushed from bottom up and based on a trial and error process. What the government should do is to institutionalize those practices which prove to be effective and thus make the market transactions embed in the social system. An embedded market is stabilized through the embeddedness character of the system.

Second, the role of social network in the economic system should receive more attention. Alternative to the rule of law, the rule of relation is also effective in securing the market transactions. There is no such market that is totally governed by the rule-based institution. In whatever an economic environment, the social network plays a certain role in information channeling and resources allocation. As an outcome of social interaction, the social network features a low fixed cost. Therefore, the social network is easily used for economic purposes such as organizing the production and enforcing the market transaction. But a network consisting of strong relationships is limited in size as it involves high marginal cost. So the market system needs the rule-based institution as a foundation for the further expansion. But in the individual transaction, the network can be a better alternative, particularly when the transaction is long-term one and requires flexibility. Though the network is so important, few economists pay attention to the market embedded in the social network,

not mention the politicians who believe mostly in rule of law.

Third, the institutional aspect of growth brings a new perspective to the growth theory. The economic growth is not only affected by the endowment of natural resources, the level of technology and the amount of labor. Besides all those factors which are discussed recurrently in the literature, the institution also matters. As the growth is a phased process, the institution needs to be adapted to the different stage of growth. First, the market should be made available, which means the freedom to exchange should be allowed and ensured. Then this market is embedded in a networked environment during the early stage of development. As the size of market increases, the relation-based exchange system becomes less productive, particularly when it comes to the creation of knowledge and extension of value chain. Therefore, the economy pursuing the further growth needs to benefit from the advantage of rule-based governance through the trade with those economies governed by the rule of law system. After such benefit is exhausted, the growth enters the third stage. Slowly, a section of the traditional network which used to be beneficial to the economic growth is replaced by the institutionalized network (rule-based institution). And the economic system works on the basis of a combined network featuring the institutionalization on one side and the personal relationship on the other. We can call it a developmental network, which adapts well to the increasing complexity of market-based cooperation and is the key factor for the next wave of growth.

Now we can answer the questions raised in Chapter one. They are also summarizations of what happened to Chinese economy during last three decades.

1. In China, the market was embedded in a relational system.
2. The market could only be embedded in the relational system when the government allows the bottom-up innovative practices and acknowledge the formal institution in a phased and experimental way.
3. The relational system provides the market with a networked environment so that it can operate smoothly without being threatened by the danger of non-cooperation and insecure transactions.
4. The individual sectors developed the adaptive institutions such as household responsibility system, collective enterprises, private lending system, which were part of China's embedded market.
5. Chinese economy will remain a mixed economy with the developmental network replacing the traditional network.

In sum, the embedded market, the relation-based governance and the developmental network are three things which invite further studies. But we don't only learn lessons from China's great economic success. We also need to look at the challenges that China faces in the next decades.

The challenges for China

The first challenge is the age structure of population. This point was not raised in the previous chapters because China's one child policy did not cause enough damage until the aging problem arises. But from now on, China is going to suffer from a lack of the labor forces. It would probably cause a decline in the market volume. Not only the foreign capital but also domestic capital would relocate to where there is an abundance of labor forces. It is reasonable to submit that the one child policy has had a profound impact on China's growth pattern and it seems that the consequence would be largely negative. Though China can upgrade the labor-intensive industries and make them less labor-dependent but more knowledge-dependent, the knowledge production also requires a certain degree of population intensity. Recently, China relaxed the one child policy yet only had a moderate effect on the increase of birth rate. The total removal of one child policy might be more effective in increasing the birth rate. And the government needs to consider preparing the basic services for the newborn Children, including medical care, babysitting, schooling and so on. Otherwise, these services are too expensive for middle and lower classes and their willingness to have more than one child is thus low. And China faces also the danger of "middle income trap". People may increase their income. But the productivities do not increase with it. Particularly in the case of labor shortage, the economic system may not generate sufficient income to support the previous living standard. And the middle-class ideology has already begun to replace the collectivist culture and the contribution to the commons is not something valuable.

The second challenge is how to preserve a constructive central-local relationship. As mentioned, the Chinese-style federalism is based on the decentralization of economic authority. However, the tax sharing system centralizes the fiscal revenue to a considerable degree. Though the central fiscal revenue is transferred to the local authorities, the central-locality bargaining is affected by that kind of arrangement. The direct economic control from top down is strengthened. Hence, it is more difficult for the local governments to implement the policy experimentation. How to arrange the central-local relationship was an important issue for the Party. It is one of those issues that need to be handled with prudence and courage. The establishment of "Pilot Free Trade Zones" is a new way to delegate the economic decision-making authority to the local governments and provide them with incentive to innovate. Besides, with the Chinese economy entering in the "new normality", the local governments are not required to have the GDP as the single factor in their goal function. So the central-local relationship now contains more dimensions than before. It should be established on a basis of more interior

The third challenge is the prevalence of relational culture in the non-economic domain. In the economic domain, the rule of law ideology gains increasing influence and help improve the efficiency of production and exchange while the relational culture still plays a role in coordinating the economic activities which requires the

flexibility or cannot afford to use rule of law institution. A structured and layered network emerges to lay the foundation for the operation of the embedded market. However, in the non-economic domain, sometimes the rule of law system does not generate sufficient benefit for the individual actors to change their behaviors. And the social network, once established, is self-reinforcing and it could cause a severe problem of corruption. For example, the politicians from the same town cooperate with each other to seize power. The academic positions are occupied by a scholar and his/her friends and students and formed a closed circle to deter the outside innovation. And this corrupted feature of network also affects the economic domain. The monopoly power can be given to a state-owned enterprise which has a reciprocal relationship with the government, even when this reciprocal relationship exists only between the general manager and the chief official. As the rise and decline of Chinese dynasties shows, the corruption caused by the over-networking could petrify the society. The Party also recognizes the negative effect of relational culture and begin to fight against network-based corruption.

Chinese people and Chinese government have done very well during the last thirty years in transforming a poor country into an economic superpower. It is a miracle and it is sincerely hoped that the miracle would continue. Now the rising labor cost forces China to adopt an innovation-based strategy for growth. As for the next step, China plans to climb up the global value chain and exploit the potential of the domestic market. But those three challenges enumerated above may jeopardize China's further development. It is China's next mission to adapt its institutional environment to the specialization-based cooperation and to the creation of knowledge as well. Again, China needs to discover its own way to accomplish the new transition.

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Yao Yang