

Transitions of Governance Mechanisms in China's Agriculture: Land Reform, the Cooperatives, the People's Commune, HRS and Agricultural Industrialization*

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This paper intensively analyzes the transitions of governance mechanisms in historical periods of China's agriculture in order to obtain a prospect for the Agricultural Industrialization. The three-pointed structure of governance mechanism presented by O. E. Williamson is applied and modified in applying to China's agriculture. By referring also to Schultz's theory, the different historical periods, from Land reform, the Cooperatives, the People's Commune, the Household Responsibility System to the Agricultural Industrialization, are respectively scrutinized with respect to their features of governance mechanism.

Keywords: China's agriculture, governance mechanism, the land reform, the cooperatives, the People's Commune, the HRS, the Agricultural Industrialization

JEL Classification Numbers: P21, P26, P32, P36

1. Introduction

Certainly the course set for modernization trod by China's economy has been extraordinarily rough; nevertheless, among all, the course taken by the agricultural sector is the most uneven. Since the People's Republic of China was founded in 1949, the governance mechanism of China's agriculture has experienced such periods as, the land reform era (1949–1953), the cooperative era (1953–1958), the People's Commune (1958–1984), the Household Responsibility System (simpli-

* The paper was presented at "Kyoto Workshop of East Asian Young Scholars—Governance Problems of East Asian Economies", September 21th, 2007. Published in the proceedings. The author is grateful to Prof. Yamamoto Hiromi for his guidance in the development of this paper; to Prof. Dic Lo for his insights and valuable comments; to Mr. Gu Yan and Ms. Cui Xiuhong for their comments and suggestions.

fied as HRS hereafter) (1978–present). Out of the HRS based on the petty scale farmer household, a new kind of agricultural production structure is emerging, which in early stages took the combined forms of both vertical and horizontal industry, in order to promote and take the advantage of the scale effects of land and reduce transaction costs. This new style is known as agricultural industrialization¹⁾ (simplified as AI hereafter) (1993–present).

With respect to the issues of AI, there has already been a variety of research done, scrutinizing AI from various perspectives such as its present situation, its macro-policy making and the approach to categorize its organizational forms (Niu, 2002; Hu, 2002, 2005; Cao, 2000; Yu, 2002; Lai and Wang, 1997). Besides, some authors take such perspectives as the new-fangled contract standpoint (Workteam, 2001), scale management and associated economy (Wu, 2001), industrial economics (Ni, 1999), commodity contracts and factoral contracts (Zhou and Cao, 2002), transaction costs (Yang, 2002) and micro-based enterprises (Hu, 1997). How to theoretically position the agricultural industrialization into the body of Chinese economics, however, is still as of yet an unresolved issue. Furthermore, in the development of AI, there are significant problems still unanswered, for example, the establishment and enforcement of the contract between Longtou enterprise and farmers, the division of profits, the establishment of intermediate organizations, and the establishment of farmer associations. Therefore, it is urgent to present AI within a theoretical model in order to analyze the distinct problems within AI. Although AI has not yet transformed the layout of the agriculture sector as a particular institution like HRS has done, in essence it turns out to be a brand new form of induced institution, changing thoroughly the allocation of labor, land and capital.

This paper intends to analyze the five stages of agricultural development, namely, land reform, cooperatives, the People's Community, HRS and AI²⁾, within the framework of the governance mechanism presented by Oliver E. Williamson. The analysis is to be conducted by closely examining from the perspectives of principle and agency theory, property rights ownership, and the control of residual

¹⁾ With respect to the application of the term of "Agricultural Industrialization" in this paper, Prof. Lo recommended to replace it with "agribusiness", which was thought to be presently practically applied in related literatures and presumably would better describe the situation, because the notion of "industrialization" might confusingly have the connotation of a subject pertaining more to "industrial" than "agricultural".

The author is thankful to Prof. Lo's insightful suggestion, nevertheless, tending to keep using the term "Agricultural Industrialization" due to the following two reasons. Firstly, although the word "agribusiness" refers to the general business involved in food production, which includes farming, seed supply, agrichemicals, farm machinery, wholesale and distribution, processing, marketing and retail sales, the term itself was born in a capitalistic economy, which differs profoundly with what we discuss in this paper. And the term therefore has two distinctly different connotations—food industry and corporate farming. The latter, not the former, in an institutional and organizational sense, is closer to the subject of this paper. Therefore, "agribusiness" itself may not precisely and completely capture the main issue to be discussed. Secondly, relevant Chinese research papers apply the term "Agricultural Industrialization". To avoid terminological confusion, I think it is better to adopt directly the Chinese term itself, using it as a proper noun by capitalizing the first letter of each word.

products, scrutinizing several features of the governance mechanism, such as the incentive intensity, administrative intensity, autonomous adaptation and cooperative adaptation. Hopefully this research may serve to enhance the proper theoretical position of AI, which is currently in the process of expanded economic growth. This paper is organized as follows, firstly we go over the concept and theory of the governance mechanism, then we elaborate on the respective features of the historical era of land form, cooperatives, the People's Commune, HRS, and lastly, the theoretical position and analysis of AI.

2. Theoretical Framework: Five-pointed Discrete Mechanisms of Governance and Its Distinguishing Attributes

New institutional innovations and transitions are called for in virtually every aspect in the Chinese economy, which is undergoing a huge transitory period. The new institutional and organizational theory is applied as a framework for analysis. In traditional neoclassical economics, markets and firms are different entities, in that prices in the markets are signals of resource allocation, while firms are merely a black box, that can be simply viewed as a production function. Coase (1937) poses questions with this proposition, by asking that, if the market is the only effective way of allocating resources, then why does the firm emerge? Therefore the blackbox corresponding to firms has an opportunity to become opened. Coase advocates that, it is because the internal trade within a firm economizes more on transaction costs than the spot trade-out in the markets, which causes firms to emerge. Firms, in Coase's terminology, are a kind of hierarchy, which differ from the market where resources are allocated horizontally³⁾ between buyer and seller, that inside the firm (or inside an organization), resources are allocated vertically⁴⁾ (Imai et al., 1982, p. 11). Compared to the market mechanism, where there are strong effects encouraging incentives for resource allocation compensated by a

²⁾ Although the land contract institution still conforms to HRS, AI is not presented as a single land or labor policy; the development of AI has profoundly altered the deployment of resource allocation of land, labor and capital. Therefore we single AI out from HRS as a parallel governance mechanism with HRS. In general, there are three principal types of AI: the Longtou enterprise type (enterprise+farmer), the intermediate organization type, and specialized market type. With respect to the linkage between Longtou enterprise and farmer, there are mainly four types (Hu, 2005), (1) the linkage of market trade (on-the-spot trade); (2) bilateral beneficial contract (before production the enterprise contracts with farmers, in which the contract is profitable to both sides; enterprise is mostly required to provide upstream services such as seeds, agricultural chemical, fertilizer, and the downstream services such as marketing); (3) relationship of shareholding (farmer invests his contracted land into the enterprise as stock); and (4) the landleasing relationship (farmer transfers contracted land to enterprise, on the other hand enterprise employs farmer as worker). This paper refers to AI as the fourth type of enterprise+farmer, the closest relationship between enterprise and farmer. There are also ways of researching, in which AI is viewed as an integration of industrial organizations. In this paper we analyze AI as the integrative combination of productive factors, instead of referring to the industrial organization.

³⁾ Both parties of a transaction are in equal positions without an upper-lower relationship.

⁴⁾ There exists an authority and control between the upper and lower classes.

less intensified administrative control, in the mechanism of hierarchy (or internal organization), autonomous adaptation and administrative controls are strong. However, the incentive intensity is reduced, as well as having an increasing bureaucratic cost (Williamson, 1985, 1988). Based on this two-pointed discrete mechanism presented by Coase, Williamson (1996) puts forward a mixed mode between the extreme forms of market and hierarchy (the firm). It is less incentive-encouraged than the markets, yet more elastic than the hierarchy.

Besides the three types of governance mechanism: market, hierarchy and the m-h mixed mode, bureaucracy is a traditional type of organization. In Max Weber's opinion (Weber, 1925, 1947), an ideal type for bureaucracy is characterized by an elaborate hierarchical division of labor directed by explicit rules impersonally applied, staffed by full-time and life-time professionals, who do not in any sense own the "means of administration", or their jobs, or the sources of their funds, and live off a salary, not from income derived directly from the performance of their job. In Weber's thinking, as there are two main forms of rationality—expediency and rational values (Weber, 1947, p. 329), the rationality of bureaucracy also falls into two categories—"zweckrational" (goal-rational) and "wertrational" (value-rational)⁵⁾ (Weber, 1947, p. 115). The former corresponds to what Williamson refers to as "intentional (hierarchical) mechanisms" (Williamson, 1996, Chapter 6) because it is explicit that firms behave in accordance with the profit-maximum principle and is therefore goal-rational, while the latter can be viewed as a true "bureaucracy", where it is the social value, the social welfare, that

Exhibit 1 Distinguishing attributes of five-pointed governance structures^{a)}

Attributes		Governance Structure				
		market	m-h hybrid	hierarchy	b-h hybrid	bureaucracy
Instruments	Incentive Intensity	++++	+++	++	+	0
	Administrative Controls	0	+	++	+++	++++
Performance Attributes	Adaptation A	++++	+++	++	+	0
	Adaptation C	0	+	++	+++	++++
Costs of Bureaucracy		0	+	++	+++	++++
Incompleteness of Contract		0	+	++	+++	++++
Contract Law		++++	+++	++	+	0

^{a)} Note: Williamson (1996, p. 105) and Nie (2004). The fourth column of b-h hybrid is added by the author. ++++: very strong, +++: strong, ++: semi-strong, +: weak.

⁵⁾ Goal-rational behavior is whatever course of conduct is well-adapted as a means to one's ends; it is economic efficiency from the actor's point of view. Value-rational behavior points to a conduct directed not by a rationally efficient goal, but by a value of some other sort (value ultimate goals).

is concerned instead of the performance, therefore we treat "bureaucracy" as a value-rational organization.

In applying Williamson's governance mechanisms into the course of transition of agriculture in China, it is assumed that the goal-rationality and value-rationality are respectively the features of hierarchy and bureaucracy, since for a firm, which is treated as hierarchy here, in pursuit of maximum profit, exerts its goal of economic performance; on the other hand, in a bureaucracy, i.e. government under communist ideology, the primary concern places emphasis upon the value of the social welfare, in stead of a mere profit.

In correspondence to the m-h mixed type, we develop another mixed type of governance mechanism, b-h (bureaucracy-hierarchy) mixed type to capture the features of the structure located between bureaucracy and hierarchy. Drawing reference with Nie (2004), who summarizes a four-pointed discrete mechanism (market, m-h hybrid, hierarchy and bureaucracy), we include the m-h mixed mode into his model and establish a more inclusive model shown in Exhibit 1. Exhibit 1 illustrates the distinguishing attributes of a five-pointed discrete mechanism of governance. The attributes primarily contain five categories: instruments (incentive intensity and administrative controls); performance attributes (adaptation A and adaptation C); costs of bureaucracy; incompleteness of contract; contract law.

In Williamson's thinking, "adaptation is the central problem of economic organization" (Williamson, 1996, p. 89). There are two types of adaptation—autonomous adaptation through price mechanism in markets (Hayek, 1945) and cooperative adaptation to adjust the behavior of and within an organization with changes and fluctuations in the environment (Barnard, 1938). The adaptation, in Hayek's sense, a behavior conducted to coordinate with the fluctuations in prices which reflect changes in the market demand and supply, is dubbed as (A) adaptation by Williamson, where "(A)" means "autonomous". On the other hand, the cooperative adaptation held by Barnard is defined as (C) adaptation by Williamson, where "(C)" stands for "cooperative", which is treated as "that kind of cooperation among men that is conscious, deliberate, purposeful" (Barnard, 1938, p. 4). As "markets are a 'marvel' in adaptation (A)" (Williamson, 1996, p. 103), the adaptation (A) and the incentive intensity in the market is the highest, while under bureaucracy it is the lowest. In compensation, the adaptation (C) and administrative controls in bureaucracy is the highest, accompanied with the highest costs. These categories in hierarchy are right in the middle.

Since the firm is described as "a nexus of contracts" (Alchain and Demsetz, 1972; Jensen and Meckling, 1976; Fama, 1980), the firm is not different from the market in contractual respects. In the same way, we can take the position that the relation between a superior and a subordinate in bureaucracy does not differ with that between a shopper and his grocer, an employer and employee. Therefore they can be treated identically in contractual respects. The incompleteness of contracts in the category of markets is the lowest, while under the category of bureaucracy it is the highest, and in the category according to hierarchy it is in the middle. On the contrary, the contract law in the markets is the highest, while the lowest is in

bureaucracy.

We utilize the five-pointed mechanism of governance to scrutinize and interpret the transitions of different governance mechanisms in China's agriculture.

3. Transitions of Governance Mechanisms in China's Agriculture: Land Reform, the Cooperatives, the People's Commune, and HRS

3.1. The Land Reform (1949–1953): market mechanism

The transition of agricultural governance in China since 1949 is based on a series of transitions in land property rights. The land reform was implemented from June 30th, 1950 to the spring of 1953, by "The Acts of Land Reforms of the People's Republic of China" passed at the eighth plenary of the central government on June 28th, 1950. The Acts decreed to abolish the land property rights held by landlords and public entities, and to divide the land, livestock, tools, excess food and houses that were confiscated from the landlords, and to give them to the poor farmers. According to the survey conducted by Gensheng Zhang (1950), the landlord and rich farmers in general account for 8–9% of the total population and 30–65% of the total land; middle farmers, poor farmers and tenants and others account for nearly 91–92% of the total population and 20–60% of the total land. The former structure of land property ownership was smashed by the land reforms and rearranged by averaging the land according to the number of farmers, in which the government by force dismantled the monopoly and incomplete-competitive markets of land and labor, returning to the complete competitive markets in land and labor. This reduced the ratio of labor/land sharply, contributing to boosting the labor productivity in the short term. Therefore, the period of land reform can be viewed as a market mechanism because the land property rights were transferred, and the incomplete landleasing markets were dismantled, making it possible for a more efficient combination of land and labor. By the mean dividing of land property rights to farmers, the governance of mechanism changes from vertical hierarchy to market mechanism, therefore, the administrative control is relatively weak, on the other hand, the incentive intensity and the adaptation (A) are greatly increased in the lower class farmers, accounting for nearly 90% of the total population. This reform in turn raised significantly the quantity of agricultural products⁶⁾.

3.2. The Cooperatives (1953–1958): market → m-h hybrid (elementary cooperatives) → b-h hybrid (advanced cooperatives)

After the land reforms had finished, from 1951 to the spring of 1953, farmer contributed allotted land as stock, which in turn led to the centrally managed land, being applied to the average village. Farmers began to join in the tentative cooper-

⁶⁾ The quantity of food in 1950 is 17% more than 1949, in 1951 28% more than 1950, and in 1952 45% more than in 1951. The quantity of cotton in 1950 is 60% more than in 1949, 135% more than in 1950, and 191% more than in 1952.

ative group, year-round cooperative group and elementary agricultural production cooperatives. The cooperative period is further divided into two stages: the elementary cooperative stage from 1953 to 1956; the advanced cooperative stage from 1956 to 1958.

After the Land Reforms, farmers received the rights to private land ownership, and were in possession of the residual control and the rights to receive residual returns. By entering the elementary cooperatives, the farmers as the principals, commissioned the managerial authority over their distributed materials of production, such as land, livestock and tools, to the cooperatives, which operate as the agencies. Therefore, the elementary cooperative should be viewed as an organization funded and run by the farmers, with the property rights of basic production materials remaining in the farmers' control. The state-run institutions, such as state-run businesses, supply-sale cooperatives (Gongxiao She) and credit cooperatives (Xinyong She) should be recognized as business and financial agencies which managed the production assets commissioned by farmers. "In elementary cooperatives, the land ownership and some of the livestock and agricultural tools are still private and belong to the individual; it still needs to pay the utilizing of production materials such as private land, livestock and tools" (Wang, 1956). Due to the complete property rights over production materials owned by farmers and the liberty enjoyed by farmers to be free to enter into or resign from the cooperatives, the relationship between farmer and cooperative is horizontally equal, instead of vertically employed. The stage of the elementary cooperative is a kind of market-hierarchy hybrid.

The collectivization of production materials from individuals characterizes the distinguishing feature of advanced cooperatives from elementary cooperatives. By raising the payment for labor, in the meantime nullifying the payment for land, the divided land is collected; by funding of cooperatives or member-payment, the livestock and main agricultural tools are purchased from individuals, the private major production materials are therefore collectivized. Because the production materials transferred from individuals to government, which functions as an agent and has purposes more than profit maximization. It is under the socialist ideology that in China the collectivization was promoted, which justifies collectivization in that a government founded under a value-rational basis is able to permeate the social welfare strata such as health care, insurance, and pension. This type of organization with a value-rational purpose is defined as a bureaucracy in our theoretical model. The change of cooperatives from the elementary to the advanced, therefore, is a transition of the governance mechanism from a market-hierarchy hybrid to a bureaucracy-hierarchy hybrid. From Exhibit 1 we know that, strong incentive intensity in the market mechanism is replaced by gradually increasing intensity in administrative controls and increasing bureaucracy costs, and in the meantime, adaptation (A) is substituted by adaptation (C).

3.3. The People's Commune (1958–1984): bureaucracy mechanism

The suggestion of implementing "the great leap-forward" was passed at the

second plenary of eighth meeting of Chinese Communist Party held on May 5th–23th, 1958. In August of 1958, the People's Commune which combines community with government was promoted by the central government, collecting small communes into large ones. At the end of October, 740,000 agricultural cooperatives in total across the country were united and restructured into 26,000 People's Communes, on average every 28.5 cooperatives were united into one commune. There were 120 million households who participated in the commune system, accounting for 99% of the total rural households in China (Xie, 2001). It has been agreed widely among scholars with the low efficiency in the collective economy in the People's Commune era. Nevertheless, agreement has not been reached with respect to the reason of its low efficiency. Two approaches had been utilized to analyze the issue: one takes the perspectives of resource allocation and incentive theory in organization, which insists that due to the free-rider problem induced by the weak linkage between labor and payment within organization, in tandem with the insufficient incentive brought about by incomplete supervision and high cost in supervision, lowered the productivity in cooperative organization (Alchain and Demsetz, 1972; Holmstrom, 1982; Binswanger and Rosenzweig, 1986; Hayami and Ruttan, 1985). The second approach examines the People's Commune from the perspective of principal and agency theory. Qingle Liu (2006) advocates that, the People's Commune is in a double principal-agency relationship, farmers being both the original consigner and the final agency, while the managers in People's Commune being both agency and consigner. Therefore, a variety of conflicts arise in dealing with the property rights in production teams.

With the above-mentioned framework, the insufficient incentive issue be interpreted by the macro aspect of governance structure. At its inception, the Commune took possession of the control over residual products, and expanded from an organization merely having an administrative purpose, which is the value-rational in Max Weber's bureaucracy theory, to an organization with two purposes, both owning the property rights over production materials and managing them, which leads the organization to be goal-rational and profit-maximization. The mixing of these two purposes makes the People's Commune bear both features of hierarchy (firms) to be profit-oriented and bureaucracy to be value-oriented. From the m-h hybrid, the People's Commune becomes a complete bureaucracy when the wage and mean-distribution system replaces the workload-corresponding distribution system. Therefore the People's Commune can be understood as a bureaucracy system. From Exhibit 1 it is explicit that, in this governance structure, both the incentive intensity and adaptation (A) are 0, which means a low incentive of farmer in production; on the other hand, the administrative controls are the highest, with the highest costs in bureaucracy and the highest degree of incompleteness of contracts. Inside the organization of the People's Commune, the production cooperation is accomplished by hierarchical commands and obedience. The model of governance mechanisms provides an excellent framework to observe and analyze the attributes of the People's Commune.

3.4. The Household Responsibility System (1978–): market-hierarchy hybrid

The Household Responsibility System is a transitional period from the People's Commune to the next stage. In 1978, farmers in Fengyang, Anhui province, took initiative to sign an agreement to contract the land of the People's Commune, which opened the great avenue for the famous HRS. From 1979–1984, the HRS spread speedily across the country. During 1978–1984, the average growth rate of agriculture was 7.7%, among which the contribution of input increase to output growth accounts for 45.79%, the organizational transition from the People's Commune to HRS contributed to as high as 48.64%, and the other 5.57% was left with technological transition, climate or effects of other variables (Lin, 1992).

The dual managerial system of the combination of unification and dispersal (Tongfen Jiehe) is the key feature of the HRS. The dual managerial system means that the managerial rights over land are singled out and separated from the centralized land property rights, of which the ownership of land still belongs to the state and the collective farm, whereas the scattering managerial rights is consigned to scattering farmers. Due to the weakened incentive in the bureaucratic People's Commune, to accomplish the best resource allocation required the assurance of keeping the objective of an agent in line with the consigner's, calling for the reduction of the supervising costs and the moral hazards of agencies. Therefore, the managerial rights to produce separate themselves from the land property rights of their own accords, while in the meantime the profit-maximization purpose is released naturally to the individual rural household. Farmers are motivated greatly because their own labor is connected directly with their income, which in turn accelerated the quantity and quality of the provision of labor and thereafter their products. Thus we could say that the behavior of dispersing households resembles that in the market mechanism. On the other hand, the state and collective community still partly have the power to conduct unified procurement and marketing, namely the demanding of power over residual products, therefore the government remains an organization functioning partly as a firm (hierarchy).

In No. 1 Document of the center of the CCP, the unified procurement of food and cotton is repealed and changed into contract-procurement, establishing the dual-track system in food distribution and management, in which there are two prices: the planned price and market price. In this stage, the dual managerial system and the dual price system characterize that the governance mechanism of this period is a market-hierarchy hybrid. The virtue of this hybrid is a relatively high incentive intensity (although weaker than in the market mechanism), where the autonomous adaptation works well. In the meantime, due to a weakened cooperative adaptation, the administrative control and the costs of bureaucracy are low.

4. The Agricultural Industrialization Period (1993–): hierarchy

Since the Reform and Openness policy was launched in 1978, the rural sector was the first to ride onto the rails of development, during which the transformation

of agricultural organizations greatly boosted agricultural production, in the meantime, reforms of agricultural products (mainly staple foods) and the distribution system also contributed to building a stable connection between production and the markets. Because of the intrinsic features of agricultural produces—the unbalance between the inelasticity of demand and the expansion of supply (Schultz, 1945; Samuelson and Nordhaus, 1998), in addition to the ineffective management of the state-owned agricultural products distribution system, all these factors combined to turn food marketing into a tough problem from its golden period before 1984. Upon this agricultural landscape in the latter 1980s, with the boom of the village and township industry, AI quietly appeared on the stage, during which the food processing and distribution industry, namely the Longtou enterprise, gradually became the representative organizational form of AI. Because the agricultural products processing and distribution industry can not only provide high added-value for agricultural products, but also help resolve organizational and technological problems such as the purchase, storage, production and marketing. What's more important is that, it provides possibilities to promote even more stability for the added-value of agricultural products, as well as being able to respond more nimbly to changes in the market. Therefore, the AI characterized by different formations such as Longtou enterprises, intermediate organizations and specialized markets, in fact can be viewed as a type of innovation intensely effecting all of the elements in both factor markets and product markets, in the meantime exerting great impact on the institutions and the rules under which agricultural production is conducted. At the beginning of 1993, the AI strategy which sought to establish a leading industry and to be fueled by the Longtou enterprise was started at Weifang, Shandong province. From December 11th, 1995, *People's Daily* published a three-day article introducing the industrializing experience of Weifang in Shandong. In 1996, the policy containing the contents of AI was written into the national plan, “the 9th Five-year plan of the national economy and social development and the outline of the long term goal of the year 2010⁷⁾”. From then on, AI was gradually promoted and extended to various places of China.

In 1992, the policy measures intending to establish the socialist market-oriented economy are put forward, in which the Agricultural Industrialization is presented as an agricultural policy to be instrumental in the traditional rural sector being developed. The policy encompasses measures to reconstruct state-owned business organizations to improve the efficiency of procurement, distribution and sales in staple foods, in tandem with the issue to incorporate petty scale and dispersed rural households into markets. There are several types of integration of agricultural

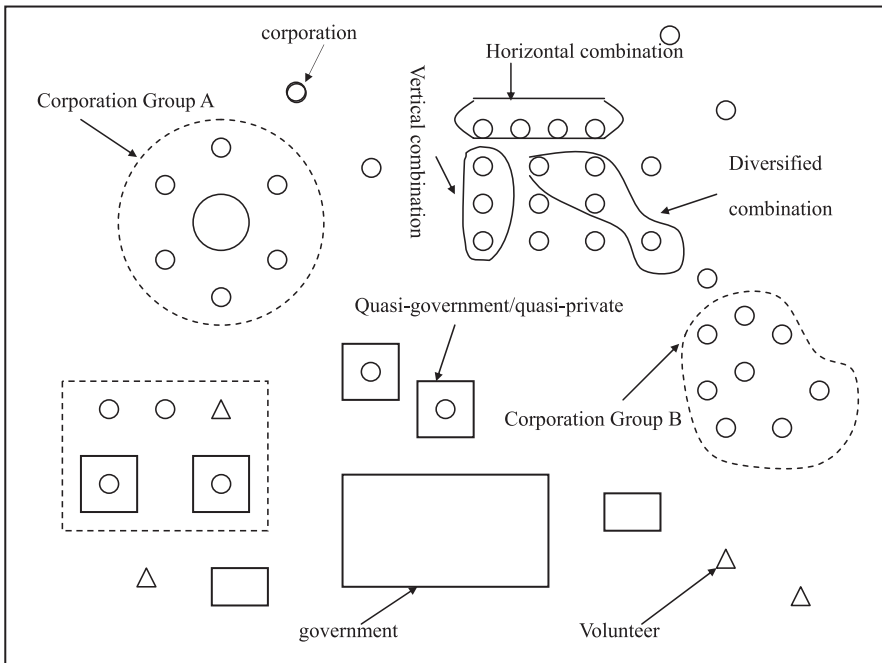
⁷⁾ Refer to the first page of the *People's Daily*, March 19th, 1996. Although the terminology of agricultural industrialization was not used, the expression of “promote the proper combination of agricultural cropping, animal husbandry, processing industry; encourage the integration of agriculture, industry and trade; help agriculture develop effectively in the direction of high quantity, high quality.” In other words, AI was promoted on the starting point of the vertical and horizontal integration of industry.

industrialization.

I. The most direct and explicit type is enterprise + farmers, as we have discussed in note1; this type accounts for the largest share in all types in AI, where the enterprise employs the farmers directly without any formal intermediate organizations. Problems arise in this type of integration in that, the unbalance in the capital holding between the employer (the enterprise) and the employee (the farmer) causes inequity in the positions between the enterprise and the farmer. Therefore this type calls for complementary intermediate organizations to cushion the unbalance. II. Enterprise + cooperative + farmer has the cooperative organization functioning as the intermediary to coordinate farmers. III. Enterprise + market + farmer is the type that markets are connected to the production. IV. Enterprise + government + cooperative + farmer has the government as outside coordinator and the cooperative as the inside coordinator. Here the key issue arises in how to deploy the relations among government, enterprises and farmers. Due to the fact that China's economy has to be scrutinized with respect to its particular feature of transition, the varying types of AI are to be summarized and analyzed in light of the relations among differing agents with the background of economic transition.

As discussed previously, the transition of China's economy connotes two dimensions: one is industrialization, namely, the transition of the major sector of

Exhibit 2 Organizations and institutions in the economic system of a society

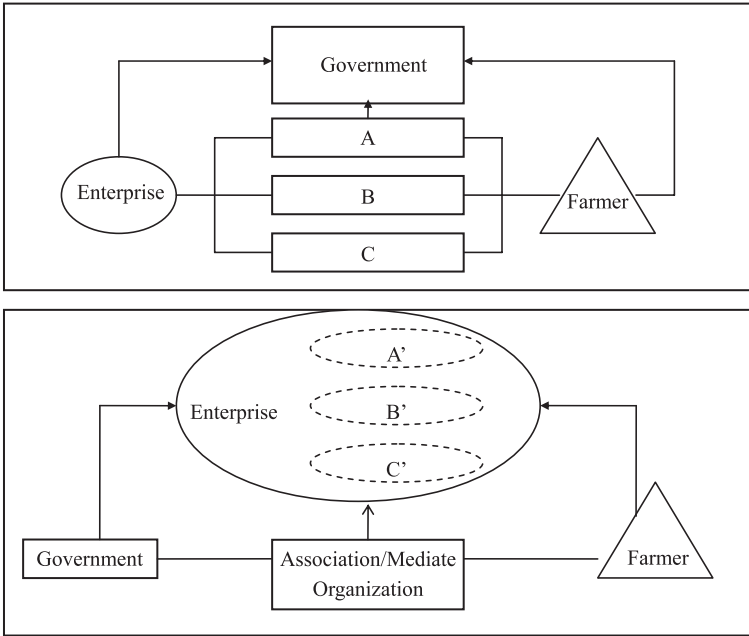


Source: Economics of Internal Organizations (Imai, et al., 1982), p. 120.

the national economy develops from the agricultural sector to the industrial sector; the other is the transition from a planned economy to a market-oriented economy. Here the relationships among government, enterprise and farmers become a major issue in the transition of the economic system. In Exhibit 2, organizations and institutions in the economic system of a mature capitalist society are illustrated to indicate that the role of extinguished organizations vary by their functions in the society. In an economic social system, there are roughly four types of organizations and institutions: the firms & the group of firms (A and B), quasi-government & quasi-non-government, government and volunteer organizations. However, in a planned or a transitional economic diagram, organizations and institutions are deployed centrally, as illustrated in the upper chart of Exhibit 3, where the governance mechanism is bureaucracy, in which adaptation (A) is negligibly tiny and the administrative costs high. Government, in the bureaucracy mechanism, functions as the centrally controlling headquarters, and makes the plans for and coordinates the production, with enterprises and farmers as employed institutions.

The purpose of Agricultural Industrialization overlaps with that of the transitional

Exhibit 3 Relationships among government/enterprise/farmer in bureaucracy (upper) and hierarchy (lower) mechanisms



A: institutions to procure agricultural produces; A': enterprise to purchase farm products
 B: institutions to supply agricultural materials; B': enterprise to supply agricultural materials
 C: institutions to sale farm products; C': enterprise to sale farm products

Source: made by the author.

economy in that both of them call for organizational decentralization. Therefore, in AI, where the hierarchy mechanism replaces the bureaucracy, enterprises take the leadership of former government, with upper-stream and down-stream firms, (agricultural procuring firms, firms of providing agricultural production materials, firms of marketing the agricultural produces) independent from the control of government, which leads not only to a lowered administrative cost, but also an intensified incentive for production, as shown in the lower chart in Exhibit 3.

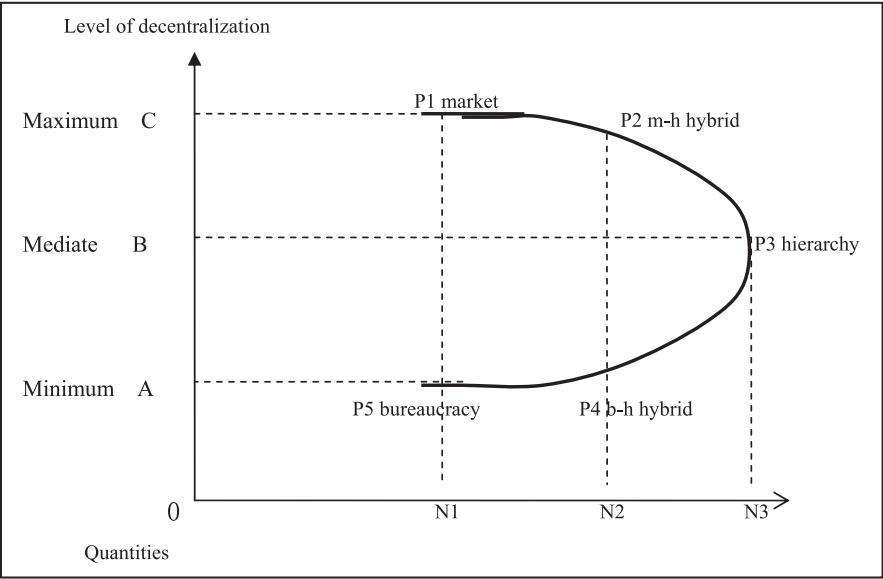
5. Conclusions

In retrospect of the history of China's agriculture, following what we have previously discussed, the transitions of governance mechanisms can be summarized as, market → market and hierarchy hybrid → bureaucracy and hierarchy hybrid → bureaucracy → market and hierarchy hybrid. The process is precisely in accordance with what T. W. Schultz has postulated about the relation between organizational decentralization and the product quantitative output. Schultz's postulation is illustrated in Exhibit 4. The vertical axis stands for the tendency for decentralization; the points A, B, C respectively shows the minimum level, the mediate level and the maximum level of decentralization. According to the different levels of decentralization corresponding to differing organizational governance, P1, P2, P3, P4 and P5⁸⁾ are respectively defined as market mechanism, market and hierarchy hybrid, hierarchy, hierarchy and bureaucracy hybrid and bureaucracy. The horizontal axis shows the output. The output at N3 is higher than that at N2, and N2 higher than N1. N1, N2 and N3 respectively represent the outputs in market mechanism (P1), bureaucracy (P5), market and hierarchy hybrid (P2), hierarchy and bureaucracy hybrid (P4), and hierarchy (P3). It is discernable from the chart that, the outputs in both extremes of governance (market and bureaucracy) are quantitatively identical, equaling with N1. This comes from the fact that, in deployment of organizational resources and for the routes of informational communication, the former has a strong autonomous incentive which is sacrificed by the cooperative adaptation and a higher administrative control in the latter form. Whereas the hierarchy (P3) stands right in the middle of governance mechanisms, in which the autonomous adaptation and corporative adaptation complement each other, leading to a decentralizational form with the highest output. With respect to the two types of hybrid (P2 and P4), due to their biases on either autonomous or corporative coordination, there are still losses in resource-allocating efficiency and informative communication.

Based on the analysis in previous empirical and theoretical discussions, the features of the transitions in the governance mechanism in China's agriculture are summarized in Exhibit 5. It is a reversed process from the land reform to the

⁸⁾ Schultz's chart is extended when adopted in this application. In the original chart in 1953 there were only three points P1, P3 and P5 in Exhibit 4 (originally numbered P1, P2, P3). Points on the horizontal axis were only N1 and N3 (numbered N1 and N2).

Exhibit 4 Possibilities of outputs and organizations



Source: T. W. Schultz (1953), *The Economic Organization of Agriculture*.

Exhibit 5 Transitions of governance mechanisms in China's

Attributes	Period					
	Land Reform	Elementary Collaboration	Advanced Collaboration	People's Commune	HRS	AI
Governance Mechanism	market (P1)	m-h hybrid (P2)	b-h hybrid (P4)	Bureaucracy (P5)	m-h hybrid (P2)	Hierarchy (P3)
Incentive Intensity	++++	+++	+	0	+++	++
Administrative Controls	0	+	+++	++++	+	++

Source: made by the author.

PC, transiting from market mechanism to bureaucracy mechanism, during which period the incentive intensity decreases from the maximum to the minimum, meanwhile the administrative control increases from the minimum to the maximum. Then the HRS is a transitory period, during which because of the relics of a powerful government, hierarchical firms are required to take more of the risks, therefore the administrative control is higher than in the HRS, complementary with the slightly weakened incentive intensity in labor. AI is associated with the transi-

tion of the Chinese economy from a planned one to a market—oriented one, which requires and creates various types of organizations by decentralizing the bureaucratic government. The organizational decentralization of China's agriculture entails the decomposition of a former bureaucratic government and the creation of profit-oriented firms, which defines AI with the hierarchical character. AI is a period with renewed organizational design and resource-allocation, among which the “enterprise + farmers” would be the most crucial form due to its greatest output indicated in Exhibit 5.

In the next decade with the speedy spread of Agricultural Industrialization, the issues with respect to the economic agencies and organizations within Chinese agriculture discussed in this paper will be undoubtedly one of the most crucial problems.

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