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THE STRUCTURE OF THE CHINESE FOOD INDUSTRIES: IMPLICATIONS FOR MODEL BUILDING

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The Chinese food economy has undergone significant reforms affecting the production, consumption and trade of food over the past 15 years. This paper seeks to analyse the changes that have occurred in the structure of the Chinese food industries and to provide insights on the current market structure. The grains industry is used to demonstrate that, although free market supply and demand forces play an increasing role in the food industries, the government continues to fundamentally shape the structure of these industries through its involvement in the purchase and sale of outputs and inputs. An attempt is made to explore the implications of the analysis for model building and empirical work.

Introduction

China is the largest producer and consumer of food in the world in total and also for many individual products including grains, fruits and vegetables. It exports a number of these products and also imports certain foods such as wheat and meat in substantial quantities, making China a very important player in world food markets. The role that China plays in the world market for these products is heavily influenced by the structure of its own food markets. Market structure is impacted by the number and size distribution of sellers and the governments role in influencing demand and supply forces. The structure of the Chinese food markets has been changing considerably over the past decade as China has introduced reforms toward making the whole economy more market orientated.

This paper seeks to assess the structure of the Chinese food industries and its implications for model building of such a structure. Background information on the food industries prior to the reforms is provided first. The subsequent section then discusses the major reforms that have impacted on these industries and describes the current market structure of food industries in China. A comparison is made between the current market situation and that which existed prior to the reforms. The paper then deals with the implications for model building of the Chinese food industries investigating the appropriateness of certain models and accounting for the government's intervention, prior to concluding comments.

The structure of the Chinese food industries prior to the reforms

Prior to the reforms of 1978, the Chinese food industries were characterised by an underlying philosophy of self-sufficiency. Production of foods was highly centrally planned, the operation of markets was almost totally government controlled through its purchasing and distribution network, and there was little use of the international markets. China was basically inward looking with self-sufficient development being the key underlying objective which took precedence over economic efficiency. In fact, economic activity during this period exhibited a tendency toward self-sufficiency at the provincial level reflecting the emphasis on equality across regions (Lyons 1987, p244).

Production was heavily organised as agriculture was based around the peoples commune system set up during the 1950s which encouraged large farm units. The collectively owned communes occupied 96 per cent of China's agricultural land, with the remaining being State farms (Hartford, 1987, p210). The structure was a hierarchal pyramid system for implementing national plans with the central government the top of the pyramid and having substantial control over the provincial and local governments. These plans determined the choice of products and volume of production through the use of quota levels. The government was always the major investor in agricultural capital construction with private investment limited to farm implements (Ling 1990, p232). In fact, the main feature of the institutional arrangements in rural China was the government's direct control over economic activities which violated the individual's rights (Yang et al 1992, p2).

The purchasing and marketing of farm products was basically monopolised by the state as farmers were required to sell products to the state for fixed prices (Ling 1990, p229, 230). The rural supply and marketing co-operatives played the key role in purchasing rural products and distributing them and they were all owned and controlled by the state (Wan et al 1988, p73). The states food distribution system was characterised by rationing and involved subsidies for the urban population. Market prices in all the food industries were determined by the government leaving no role for free market demand and supply forces to determine prices. The procurement prices set by the government usually left little incentive for farmers to produce greater quantities as these prices were very low and substantially lower than the prices at which they were sold to urban consumers.

The government's self sufficiency philosophy deterred the use of the international market. In fact, there was an explicit rejection of foreign borrowing, trade and investment with capitalist countries prior to the reforms (Kamath 1990, p110). Export and import levels were decided on within the planning process with all trade channelled through foreign trade corporations and the exchange rate basically performing an accounting function,

having a limited role in allocating resources (Martin 1990, p3, 7). The share of exports from agriculture had been low in China relative to other developing countries, however, food accounted for a relatively large share of China's imports.

Overall, the period prior to reforms was characterised by heavy central planning with production totally influenced by government policy. More importantly, the government's purchasing and distribution activities along with its control of the international influences led to a very rigid market structure. Although there would have existed forces for the creation of private markets, the government policies simply did not allow them to be created, or certainly not to any level that encouraged or reflected the true underlying desires of the community.

The reforms and current structure of Chinese food industries

From 1978 significant economic reforms were introduced for the agricultural sector of China. These reforms have been aimed at increasing productivity and the role of private forces. They have involved two major stages and have led to a vastly different market structure of the food industries, with further reforms likely.

Reforms were introduced to increase productivity by increasing the incentives for private production. A major objective was to decentralise production decisions from the collective system to the individual household (Fan et al 1994b, p72). This was to be achieved by introducing the 'Household Responsibility System' which can be considered a kind of tenant-farming system in which public ownership of land is combined with private ownership of capital. Under this system individuals have freedom to use their allocated land with the result being that family farms are now the basic economic unit (Ling 1990, p231).

More specifically, the reform process involved two major stages. In the first stage conducted from 1978 to 1984 the state maintained the existing design of state commercial planning for major agricultural products but adjusted state planned quotas and prices. It relaxed restrictions for private trade allowing produces to engage in private trade provided they fulfilled their delivery quotas (Sicular 1988). It also introduced state trading at negotiated prices. It had minimum delivery quotas but no maximum limit with a fixed price for the quota delivery and a bonus price for above quota (Sicular 1988, p287).

The second stage reforms were used to modify the design of procurement planning and greatly reduce the scope of planned commerce (Sicular 1988, p291). They focussed on redesign of allocation mechanisms, notably substitution of markets and manipulation of

prices (Lyons 1993). Redesign of the state procurement system began in 1983 which eliminated the distinction between quota and above quota delivery. The state no longer promised to buy as much as farmers could sell. Structural policies were introduced for stimulating diversification of agriculture which reduced the emphasis on grains and encouraged the development of cash crops and livestock (Hartford 1987, p212). Further reforms occurred including grain and oilseed price reform in 1991, while there has also recently been the introduction of wholesale and futures markets in grain (World Bank 1992, p43). The role of these wholesale markets, which can include futures contracts are at national, regional and local levels, is likely to increase further. Futures exchanges were introduced in 1993 with the Chinese Futures Exchange Association being established in October 1994, which is made up of futures exchange from 10 of the largest cities in China. The association is expected to help boost foreign co-operation in the area as foreign futures companies are showing growing interest in the Chinese market (Weiling 1994, p1).

For instance, with respect to grains, the major food industry in China, the reforms in 1978 saw quotas being set for farmers but they had freedom to produce and deliver above quota quantities to the State which guaranteed purchase. However, various problems arose such as storage facilities and different quota levels for different regions. Further reforms led to elimination of the distinction between quota and above quota deliveries with new prices being set equal to 30% of the quota price plus 70% of the above quota price (Sicular 1988). In the second phase of reforms, grain quotas were replaced with a program of contract and market purchases. In theory these contracts were meant to be voluntary but in practice they were not and closely resembled the old procurement system (Sicular 1988, p291). In April 1992 the state raised its monopolised selling prices of grain and realised the same prices for purchasing and marketing (Agriculture Yearbook 1993, p54). This resulted in all provinces adjusting retail grain prices in line with purchase prices while at the same time opening retail markets (The Research Group on Annual Analysis of Rural Economy 1994, p78). With the introduction of the economic reforms the pressure for grain self sufficiency eased somewhat and farmers were able to allocate their resources to more profitable non-grain crops. The effect has been increased grain imports to make up for the farmers producing the cash crops and also to meet the significant increased demand for both feed and food grain (Carter and Zhong 1991).

The production, pricing and marketing reforms have also coincided with reforms on foreign trade. In particular, the monopoly powers for many central foreign trade corporations were abolished (Huang 1993). From an initial position of around 15 foreign trade corporations operating to strict plans there was over 5,000 by 1990. In January 1991 further reforms occurred that eliminated central subsidies for export and increased

the local retention of foreign exchange (World Bank 1992, p48). All these reforms have seemingly altered the structure of food markets in China.

The current structure of the food industries

The food industries in China are now characterised by a greater role for free markets. In 1991, for example, there were 72,600 rural and urban fairs which accounted for a quarter of the social retail sales (Agriculture Yearbook 1992, p46). This increased role of the free markets is highlighted by the major food industries in China; grains, meat, fruit and vegetables as well as the food processing industry. However, the government still plays a role in these industries, particularly grains and has a tendency to step in whenever the market is not operating as it desires. On the other hand, the government's intervention is likely to gradually decline as the markets develop and further reforms are introduced.

The reforms have led to a much more diversified structure of the grains industry. At present the supply of grains can come through different channels. These are, from the government, through the wholesale markets, through free markets on the side of the road, farmers selling directly to individuals or imports of grain. The supply of grain from imports is determined by the central authority based on provincial government needs (Ceroils personal communication 1994). The increased role of the free enterprise is indicated by the level of grain merchants. In Fujian province alone there are now more than 7,000 merchants involved in the grains trade (Lyons 1993). Grains are demanded for food, feed and seed. The food demand consists mainly of the end consumers while some government outlets also purchase grain, acting as a middle man between farmer and household. The different sources of grain means there exist various prices in different markets although arbitrage limits the price disparity. Different prices also exist for different quality grains with grain quality actually determined by weight (Shun Yi County personal communication 1994). For instance, even within the state purchase prices they have different floor prices for different wheats such as northern winter wheat and southern winter wheat (The Research Group on Annual Analysis of Rural Economy 1994, p80). These prices reflect a much more demand driven structure.

The meat industry is similarly characterised by free markets and some government intervention. Meats are mostly sold through free or wholesale markets. Within the meat industry the pig market is by far the most important. There are two main types of traders in the pig market; private market agents and state run ones, while there are a couple of co-operatives, but their percentage of the market is small. In 1992, the private sector had nearly half the market in purchasing hogs and 53 per cent of the domestic sales of pork (Bingsheng 1992, p92). There are hardly any business linkages between the private and

state run firms as the state sector wants to protect itself from the private sector competition (Bingsheng 1992, p96). The competition between the private and state marketing sector is not on a par as the state marketing sector is much better equipped. The private meat traders are mainly farmers and have no modern marketing facilities with no long distance wholesale activities. The majority of private traders have no division of labour with all undertaking purchasing, slaughtering and retailing activities (Bingsheng 1992). However, the advantages for the state run agents are likely to decline as the number of state traders decreases, the private agents grow in size and gain access to technology and specialisation. Further, the private wholesale markets are likely to create greater opportunities for the private meat traders. To keep consumer prices low and stable the prices at the retail level in the state-run meat shops are often fixed while there may also be upper price limits for the private retailing activities at free markets (Bingsheng 1992).

The vegetables industry is probably the most open of all the food markets with demand and supply forces determining prices. Farmers sell vegetables either directly to consumers, through the free market or through the wholesale markets with the purchases either being households or retailers. The government does play a role in the administration and operation of some wholesale markets however the prices are determined by demand and supply in these markets. There exist state level and provincial level wholesale markets in a number of provinces. There is now more than 5,000 wholesale markets for vegetables and fruits accounting for more than a third of the transactions with the degree of competition between the wholesale markets varying from province to province (Agriculture Yearbook 1992, p46, 47). These wholesale markets are very competitive, for both the management who compete for sellers through their administration charges and between the sellers within each wholesale market.

The demand for processed foods in China has also increased quickly especially in the urban areas where the market size is now estimated to be $42 billion (Samuel 1994, p31). In 1979 only 5 per cent of meat was processed whereas in 1994 this level has risen to 20 per cent (IAE personal communication 1994). This reflects a change in Chinese preferences away from traditional home cooked foods towards commercially processed foods as well as reflecting the associated income increase that China has experienced. Meat, cereals and fruit and vegetable products account for the majority of consumer expenditure on processed food and beverage products (Samuel 1994, p15). The government has very little control over prices in food processing although it is involved in some big food processing firms (Ding personal communication 1994). This creates significant incentives for the private sector which is reflected by significant foreign investment into China in the processing area, mainly in the form of joint ventures. This

area of the Chinese food industry is likely to experience further growth from the private sector.

It appears that, although there is an increased role for the market, the Chinese food industry is still impacted by direct and indirect policy interventions. The state sector remains important in wholesaling agricultural products, retailing commodities under price controls and the ration system (World Bank 1992, p45). The state owned enterprises compete strongly with emerging enterprises which suffer from disadvantages in terms of technology, management and economies of scale (The Research Group on Annual Analysis of Rural Economy 1994, p25). However, this is changing as since the reforms 75 percent of all state owned commercial and service companies had been sold or leased to private owners with free entry allowed for others (Harrold 1992, p12). The main reason for the Chinese food industry not to be considered a free market is that the government steps in where the market is not operating as it desires. For example, when a pork shortage occurred in 1987, the rationing system was reverted to in several large cities (Ling 1990, p237). In 1988, when faced with a crisis, the government postponed further price liberalisation, adopted a series of stabilisation measures with direct controls on prices and markets being stiffened and applying regulations that had previously been ignored (World Bank 1990, pxiv). In relation to grains the government units prevented the export of grains from their area until procurement objectives were met (Johnson 1991, p4). Further price adjustments were made in 1989-91 at the same time that the government attempted to stop excessive fluctuations in market prices by imposing administratively set ceilings or controlled prices (World Bank 1992, p102). A more recent example is suspension of trading for rice and rapeseed futures in October 1994 on the Shanghai exchange one of the largest in the countries, to curb the surging prices caused by "excessive speculation in futures trading" (Jie 1994, p4). This reflects the government practice of changing policy to allow a greater role for free market forces but stepping in in the early stages to make sure that the markets operate to the communities advantage. As these markets develop and the community becomes aware of their facilities and the way in which they operate, it is likely that the government's tendency to intervene will decline.

Although the government still intervenes in China's food industry, reforms are likely to continue leading market forces to play an increasing role in determining allocations. Price reform is expected to proceed in steps with the government still paying close attention to its impact on economic and social stability (World Bank 1992, p107). Products still under government purchase arrangements like foodgrains, edible oils, cotton, sugar and tobacco are to be adjusted. The eventual goal is the abolition of direct control over most agricultural procurement prices, while retaining import barriers for some food products and using indirect intervention to dampen short term price fluctuations (World Bank 1990,

p64). A key part of the next reform process is the setting up of specialised markets for trading in large volumes and in futures. These are likely to eventually substitute the former planned distribution networks and the present ad hoc trading fairs (World Bank 1992, p108). Even in the grains industry which receives the most intervention there is likely to be substantial reforms reducing the governments role. In February 1993 the state sponsored a national policy meeting on grain production and marketing during which it announced policies "advancing reform of the grain purchase and marketing system" (The Research Group on Annual Analysis of Rural Economy 1994, p78). The major policies were that of dividing the grain administration system into different levels and more specifically establishing a two level (central and provincial) control system. This meant that imports and exports of grain between provinces would be changed from centrally planned allocations to market orientated allocations with the provincial supply and demand for grain being fulfilled through direct order or wholesale market. Reforms are also to occur in the grain circulation system and in particular, to separate management of the special grain reserve from normal business operations (The Research Group on Annual Analysis of Rural Economy 1994, p79, 80). The continuing reform process and reduced role and intervention by the government will probably lead to a market structure which is characterised much more by competitively determined prices and quantities.

Comparison of market structure prior to and after reforms

The operation of Chinese food markets has changed considerably since 1978 from being almost totally government controlled in every aspect to having a much greater role for free market forces. The government now has different forms of intervention in the markets, while the international market has a much greater influence on China's markets.

There is now a lot less central planning across agriculture as the rural communities are largely left to themselves in managing their activities so long as they meet the production quotas set by the central government (Koo 1990). For instance, the newly established township government, which constitutes the lowest level of the formal state structure, reflects the shift to greater reliance on market co-ordination (Nee and Young 1991, p295), while fledgling financial markets have also taken shape in rural areas (Agriculture Yearbook 1993, p53). The reforms have encouraged specialisation by providing for market determined resource allocation to a degree which has meant that the structure of food production has become much more diversified. Localities that were previously only planting grain crops diversified as opportunities arose, while many localities tried to improve or shift to higher quality produce. More importantly, the farmers now have much greater freedom in their choice of crops as aside from quotas and paying taxes, Chinese

farmers now have the freedom to make cropping and input decisions and are allowed to retain any profits they earn (Feder et al 1992, p1). Further, the ability of farmers to sell on the free market encourages them to specialise in certain crops and take advantage of economies of scale. A new organisational form of agriculture has arisen, orientated to the market and led by enterprises doing processing of agricultural and sideline produce. This results in enterprises undertaking negotiations and signing production and marketing contracts with farmers (Agriculture Yearbook 1993, p52). The farmers can now respond to market opportunities as they arise which is likely to lead to more typical neoclassical supply responses to changing market prices than previously existed in China, while there now exists as much greater role for interprovincial trade which is at significantly higher levels than that of 1978.

Although the government still sets procurement and distribution prices for certain quantities of grain and is still the major source of investment in agriculture its role has changed considerably. Rather than control supply and the market the government is now a participant in the markets through buying and selling and uses the market to influence supply. For instance, the government plays a role through the grassroots grain handling units as prior to the sowing season they sign contracts with farmers according to the guiding or floating prices and if contracts don't specify the prices then the market price is to be paid (Agriculture Yearbook 1993, p55). The government is an owner of some markets which they try to run as commercial entities and compete with private markets. The central government is going to continue to invest in infrastructure by building "standardised wholesale markets and farmers markets around the country" (Xinhua 1994, p1). Further, the reforms have led to a significant increase in managerial autonomy of state owned enterprises as the managers have more authority to decide production, supply and sales levels (Xiao 1991, p48). Overall, there is much more freedom for government agencies at all levels reflecting a different role of the government.

With respect to the international market, the central government heavily controlled the import and export levels prior to 1978 and did not utilise the advantages which the international market offered them. In terms of imports the central government still plays a major role in controlling them and specifically that of grains. However, the provinces are now more open to the world in terms of importing seeds and technology with the reforms leading to extreme amounts of foreign capital flowing into agricultural development (Agriculture Yearbook 1993, p71). More importantly, there is now much greater leverage for provinces and private companies to export. This has resulted in the Chinese food markets being much more open to the outside world as foreign companies are able to set up joint ventures in provinces to export certain foods and the establishment of the special economic zones has also brought about considerable foreign direct investment. The

coastal areas have been the leaders in accelerating the pace of opening up to the outside world. An example is that of Zheijan province which began accepting direct orders from foreign traders (Agriculture Yearbook 1993, p72). Further, from 1991 the biggest vegetable collecting and distribution centre in China, entered the international markets exporting to several regions (Agriculture Yearbook 1993, p177). This increased role of foreign firms and the international market impacts the demand and supply forces in local markets.

In summary, the reforms mean that the government no longer controls all production and distribution. Free market forces now determine the majority of prices although these prices can be influenced by the governments involvement in the markets. Farmers have significantly more freedom in their production and distribution systems while the Chinese markets are significantly more open to the international market. Thus, the market structure is now much more characterised by competitively determined prices and quantities which reflect individuals own decisions and tastes.

Implications for Model Building

At first glance the above discussion indicates that the Chinese food industry may not be consistent with the assumptions of a perfect market in neoclassical economics and does not seem to correspond with the conditions of a free market. More specifically, both demand and supply are impacted by government intervention which means the price and quantities eventually traded may not necessarily correspond with those that would exist in a free market. Digging deeper, however, the current market structure for food products in China indicates that market competition is significant. This is similar to food industries in other CPE's which are characterised by a large number of producers, ease of entry and little product differentiation (Roman 1986, p331). This competition and the increased trade in free markets means that most resource allocation decisions are being made at the margin. Further, there are very few private organisations that have any market power in the food industries due to the number and diversity of markets that exist. Even where there is market power, this is mainly held by the government which is not using it to exploit individuals. More importantly, the role of the government is continuing to decline. These observations imply that the appropriateness of neoclassical perfect market models for the Chinese food industries is increasing. However, models still need to address issues of what aspect of the industry is being modelled, the advantages and disadvantages of different modelling approaches for the Chinese case and the type and degree of government intervention in the market.

What aspect of the industry is being modelled determines the suitability of different modelling approaches. In particular, whether the model is of a partial or general equilibrium nature and what actual characteristics of the market are being analysed. The model could analyse the performance of the industry, assess the level of rents in the industry or estimate future production and consumption levels. All of these factors would be of importance for developing trade strategies for China particularly as China moves further towards trade liberalisation. Estimating future production and consumption levels will allow estimation of the excess supply and demand levels for the products to indicate the likely future trade levels. Models that are attempting to predict grain production levels into the future need to take account of the likely reduced role of the government in production assistance in the future. This is because previous output levels which are the basis for the future projections significantly reflect the government's role.

Mathematical programming and econometrics are the two major forms of modelling. Programming models usually specify optimum or profit maximising outputs at different levels of factor or product price yet the actual supply response for China cannot be based purely on this due to the government's involvement and existence of many subsistence farmers. However, programming models may still be vary useful as this approach can be used with different maximising objectives which may reflect the government's involvement. For instance, the government may have the objective of maximising output, market share or employment rather than profit. A disadvantage of programming is that a static model using cross sectional data is not very useful to analyse the impact of policy changes while the development of a dynamic programming approach requires extensive resources (Liang Yu and Buckwell 1991, p54).

Econometrics suffers from problems of specifying the functional form and relevant parameters, however, its positive nature and its similarity for assessing the long term impact of policy changes make it quite appropriate for the Chinese food industries. In econometric modelling with time series data there is no requirement to specify unique producers (Liang Yu and Buckwell 1991, p55). In terms of consumption analysis there are many alternative econometric models. The almost ideal demand system (AIDS) model, that has been previously applied to China by Fan et al (1994a) is more appropriate than the linear expenditure system (LES) and the extended LES (ELES) models that have been used previously by Lewis and Andrews (1989). This is because any conclusions regarding structural change in the demand patterns may actually represent an incorrect functional form as the parameter test is incorrect (see Chalfant and Alston 1988, Gorny and Ahmadi-Esfahani 1993). The AIDS model is much more flexible in its functional form while its estimation and interpretation are rather simple. Most importantly, it can be manipulated to include policy variables or other factors that may impact consumption

patterns. The Rotterdam model which has similar characteristics to the AIDS model in terms of flexible functions is also appropriate for the Chinese case. In fact, a compound model can be formed between the two approaches to allow non-nested testing to find the correct functional forms for a data set (see Alston and Chalfant 1993, p309-311).

Any plausible model of the Chinese food industry needs to account for the government's intervention. The type and degree of intervention varies considerably from one industry to another. Interventions that still exist as discussed earlier include purchasing policies, price restrictions, trade restrictions and active participation by government in selling the good. The model needs to account for those forms where the degree will vary depending on the market situation.

Most of these forms of intervention are eventually reflected in the price of the product. It is important that wherever price controls exist the appropriate market structure modelling approach is used as the impact of price controls depends heavily on the market structure. Price ceilings in a competitive situation that are below the current equilibrium price will lead to a reduction in output and a situation of excess demand. However, in a non competitive market where a supplier is facing a downward sloping demand curve, a price ceiling may actually increase output (Helpmann 1988, p342). Price controls in a non-competitive case may result in increased output because market power is used to restrict output and increase price yet the introduction of price ceilings make the profit maximising level of output higher for these suppliers. However, the current market structure of food industries in China does not correspond to much market power for any individual suppliers. In fact the only suppliers with any real market power are the government in those markets where it procures and distributes a substantial quantity of the good. Further, this situation is already limited and is continuing to decline further as the government's level of procurement and distribution continues to decrease. Thus, the models of the Chinese food economy can really be of a free market nature which would mean that price controls result in a situation of excess demand if they are below the equilibrium price and excess supply if they are above the equilibrium price.

Although the government's role needs to be taken into account, recent developments have helped reduce modelling difficulties. In particular, the increased openness of the Chinese economy to the international market and particularly the export sector has allowed internal prices to come much more in line with international prices. The further that China opens up, and especially if it becomes a member of GATT, the more appropriate the use of international prices as shadow prices for China becomes. Further, the elimination of the two exchange rate system has helped bring China's domestic markets more in line with

international markets. This has reduced the difficulty of modelling that previously had to take account of the two forms of foreign exchange.

Thus, it appears that the appropriateness of neoclassical models for Chinese food industries has increased and the continuing reforms will make them even more appropriate. Of course these models still need adjustments to account for the government's intervention and this will vary from industry to industry. However, this can be readily accommodated using the available modelling approaches to western economies.

Concluding Comments

The market structure of the Chinese food industry has changed considerably over the past decade. From a totally centrally planned economy prior to 1978 free market demand and supply forces now play an increasing role in determining prices. However, the government still plays a role which increases dramatically when they believe that prices are moving too far out of line. Any model building of the Chinese food industries needs to account for this. More importantly, the models predicting future excess demand/supply levels need to account for the fact that the market structure of China's food industries are likely to change further, with the government's role likely to continue to decline. Different industries will be affected differently and thus different models will be required for different food industries. The timespan for which China's food industries become nearly free from government intervention depends on China's macroeconomic situation. The expected increased role of the free market will increase the appropriateness of the neoclassical modelling approaches to the Chinese food industries.

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