WHOLESALE FOOD MARKETS WITH CHINESE CHARACTERISTICS*

Fredoun Z. Ahmadi-Esfahani

Christopher G. Locke

Department of Agricultural Economics

The University of Sydney

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Abstract

There has been a growing interest in the role of the Chinese wholesale food markets in agricultural development and the food distribution system. Despite this attention, very little is known about these institutions and the way that they operate. In this paper, some case studies are used to develop the profile of the existing nature and structure of a number of important wholesale markets. After an overview of the theoretical role of these markets and how they are perceived by Chinese policy makers, a review of some of the leading markets in Beijing, Nanjing, Guangzhou and Shanghai is provided. Observations are then made about how these markets operate in practice and how they contribute to the Chinese food economy. It is postulated that these institutions are similar to centralised agricultural wholesale markets in capitalist countries and are the key to analysing future food demand and consumption patterns in China

Keywords

China, wholesale food markets, policy

Introduction

There has been a great deal of interest recently in the development of the system of circulation of agricultural products in China. The focus of this appears to be on determining the appropriate structure, regulation and price discovery system to link small, unskilled producers with a large market. The existing connections are very weak. However, the centralised wholesale market has been argued to be one of the main models that the government has chosen for both improving the infrastructure and providing a vehicle for some sort of market control (Zhong 1996). Despite this, little is known about these institutions and how they compare to their western counterparts. To address these issues, the following research reports on some findings of a recent visit to some of these markets in China, in an effort to develop a profile of the existing structure of Chinese food wholesale markets. As argued by Hua and Fan (1993), the solution of the food circulation problem is crucial for China's agricultural development in the 1990s.

The focus of this analysis is primarily on fruit and vegetable markets. The structure of the paper is as follows. Firstly, the theoretical issues of structure, government intervention and price

discovery in wholesale markets are described. Secondly, using information gathered on recent field work in China, an overview of some of the leading wholesale markets in Beijing, Nanjing, Guangzhou and Shanghai is provided. The future directions and policy impacts on these institutions are then analysed. Finally, conclusions are drawn for the contribution and future role of Chinese wholesale markets in the Chinese food economy. It is postulated that these [illegible] with the key to analysing further demand and consumption patterns and a [illegible] for the Chinese government's food policy.

CONCEPTUAL FRAMEWORK

[illegible] the literature on the structural function of wholesale markets in developing countries is limited, the literature on price discovery, market structure, and the role of the government in markets is vast. As a background to more detailed consideration of the case studies from the wholesale markets the following sections discuss the structure, regulation and price discovery processes within the wholesale markets in China. Much of this material is drawn from analyses of wholesale markets in developed countries. It is argued in this paper that the wholesale markets in China are not simply another form of government intervention, and that their role and price discovery processes are not philosophically different from those in capitalist economies, despite some differences in the stage of development, and the actual mechanisms of intervention used.

Structure of Wholesale Markets

The Chinese government has recently committed itself to further development of wholesale marketing institutions. Sixty major wholesale markets for vegetables, meat, fish and fruits are being established over the next five years by the Ministry of Agriculture to facilitate the handling and distribution of these products (Xinhua 1996). In the light of this development, it is important to consider the structural characteristics of these markets, especially in comparison to those of developed countries. One of the key issues to consider is that these markets are currently in a state of underdevelopment, and can only be seen in proper contrast to their developed country counter-parts when it is appreciated that the structure of all food markets is basically dynamic or evolving (Kohls et al 1990,p205).

Generally speaking, in advanced economies, the number of market functions are expanded, the marketing channels are longer, and firms specialise in performing separate but related marketing functions. By contrast, underdeveloped markets are likely to cover a range of marketing functions, and perhaps be the sole link between producers and retailers, or even producers and final consumers. In developed markets, a small number of "Limited Line" wholesalers may specialise, sometimes completely, in particular products. Similarly, "General Line" wholesalers

may increase size, and develop regional markets, more widespread use of computerisation, mechanisation, electronic ordering and billing, the inclusion of non-food lines, and increased ownership of retail food stores (Kohls et al 1990,p91).

At the heart of this evolutionary process is the development of structures that can facilitate more efficient vertical market co-ordination. This trend is perhaps self-perpetuating, as the more co-ordinated the markets are, the more costly errors become, and more accurate co-ordination is necessary (Kohls et al 1990,p205). Beyond expansion of ownership to different levels on the marketing chain, contracts and improved price discovery are used increasingly to facilitate this process of information transfer. Should this evolution continue, it is likely to lead to the emergence of food retailing chains, which will compete with and restrain the power of the existing wholesale markets.

Another trend in the evolution of food markets is increasing decentralisation (Kohls et al 1990, p207). While, initially, economies of scale are likely to encourage centralisation of marketing, modern markets are becoming increasingly decentralised, to the extent that some of the wholesale activity occurs outside traditional terminal markets, by connecting buyer agents with the production area. This process minimises the physical need to move commodities into a central location. The degree to which this happens is often a function of increasing sophistication of producers in selling, and the previously mentioned greater use of market co-ordinating mechanisms (Kohls et al 1990, p210). However, it is perhaps a function of the propensity of these products to spoil and the variability in production that a greater level of sophistication in handling, storage and transformation is also pursued. The central difficulty with these decentralised markets is in their ability to discover efficient prices, despite some potential gains in operation efficiency (p212). The decentralisation would appear to lead to a greater departure from perfect competition, and may have led to terminal markets to become "thin", and hence less effective in their price discovery (p213).

To compete as decentralisation occurs, wholesale firms are increasingly involved in a greater range of marketing functions, buyer services, and specialist distance provision. This often involves relocation of the market structures to better locations. Large buyers integrate into this chain at various level via buying offices, distribution centres and retail linkages. They may also be involved in regulating the flow to market through co-operative agreements between growers and shipping point firms. Such an understanding requires an appreciation that the role of wholesaling in the food marketing channel is not simply one of pass-through, as the efficiency of this link has major impacts on the remainder of the food industry, and their actions add utility to food products (Kohls and Uhl 1990).

Watson (1996) suggests a simplification of the distinction between wholesale markets in industrial economies and those being found in the planned Chinese environment that is worthy of re-iteration. Industrial markets are distinguished by being designed for speed of handling and exchange, having a large geographical reach, networked to good transport and storage infrastructure, standardised packaging and product descriptions, minimal handling by humans to avoid damage, having an increasing level of product preparation (packing, washing etc.) done by the producers, and including a range of support services and institutions. The planned, or pre-reform, Chinese model has none of these, and is based principally on the idea of supporting urban self-sufficiency. Although much of this has changed with the progress of the reforms, the degree to which this distinction is somewhat valid is still indicative of the current stage in the reform process.

As the majority of the food markets under consideration here trade mainly in fruits and vegetables, it is important to note some commodity characteristics that have impacted on their structures. These include perishability, large price and quantity variations, seasonality, alternative product forms, bulkiness of products, and geographic specialisation of production (Kohl et al pp485-491). To preserve quality of these products during marketing requires a greater level of sophistication in handling to prevent spoilage. Sales have to be rapid, and may therefore be difficult to organise or formalise. Where supply is inherently unstable, contracts and agency agreements are used to try and bring this to processes where the possibilities for supply control may be limited. Seasonal effects may be limited by draining supply from a variety of growing regions, but these require infrastructure in transport and communications to be effective. Similarly, overcoming seasonal variation by transformation to close substitutes, such as producing juices and freezing them, also requires good infrastructure. This maintains the product in a form that can still be used by processors, but is less expensive to store.

According to the Price Research Centre of the Ministry of Agriculture (Xu 1996), the wholesale market in China is seen as having four principal functions, which are not dissimilar to the preceding discussion.

1. The first function of the wholesale market is to broaden commodity separation.
2. The second function of the wholesale market is to bring the price mechanism into force.
3. The third function of the wholesale market is to satisfy transaction needs, to save costs to consumers and to increase the opportunities for transactions.
4. The fourth function of the wholesale market is to provide information to sellers. The Ministry of Agriculture is trying to improve the transfer of information and co-operation among sellers.

As indicated previously, the level of analysis of these markets is very limited, with recent analyses by Watson (1996) and Xu (1996a) being new and useful exceptions to this

observation. This may be partly explained by the fact that the role of the wholesale market in China is changing. These new markets are seen by the Centre of Commerce and Domestic Trade Ministry as existing on three levels. The most basic is a less structured free retail markets, which account for around 83% of this trade. Nearly all the remainder (17%) are wholesale markets, which are more interventionist and exist in both cities and rural areas. A third group, which is still evolving, are the so called "modern" or futures markets (Ding 1996). In all, according to the Price Research Centre of the Ministry of Agriculture, there are now approximately 2 190 wholesale markets across China (Xu 1996). These have begun with vegetables and fruits and have developed into meat, grain and aquatic products.

Government Intervention

The Price Research Centre of the Ministry of Agriculture classifies two types of wholesale market, that which is formed spontaneously, for example Dazhongsi in Beijing, and that which is set up by the government. The characteristics of the first are high transaction volume but low levels of regulation. The second type is perfectly regulated but has a much lower level of activity. Most observers would argue that the latter markets will continue to be run by the government well into the future. The Price Research Centre of the Ministry of Agriculture is trying to meet the challenge of increasing the level of activity to this group (Xu 1996 and 1996a). Part of the reason for the difficulties of the state-owned markets would appear to be in the inadequacies in infrastructure and lack of clarity of management objectives. Watson (1996) notes that the rapid, but haphazard, development of these markets from the early 1990s has produced a wide variety of administrative structures. These include indirect management by state agencies, by the railway authorities with other statement agencies supervising, and by independent organisations on the outskirts of cities (Watson 1996). There are also a wide variety of government departments involved in administering, licensing and servicing these markets. The Domestic Trade Ministry, which is involved in prices, is currently attempting to alter the structure of this industry to establish main markets (for example, grains, oils and sugar) in different provinces (Ding 1996).

It is important to note that, in these highly regulated markets, the methods for government intervention in the price discovery process are varied widely, and are not simply restricted to those products whose prices are determined by administrative arrangements. Gardner (1982) observes that there are a number of concerns raised about unregulated food markets that are succour to government desires to intervene in their conduct. These include a desire by the government to stabilise prices, a more fundamentalist argument about the "specialness" of food, and basic concerns about the structure of the economy. While it is debatable how valid these arguments are (see, for example, the discussion in Gardner 1982), there would appear good

anecdotal evidence that the government is keen to be involved in the development of agricultural production, even if at a cost to the industrial sector's growth.

Kohls et al (1990,p355-368) observe how a range of policies aimed at supporting either producers or consumers can have a large impact on the processes and outcomes of price discovery. When considering administered prices, it is important to note that prices which are administered to protect consumers - a situation not uncommon in China - could have a major impact at the retail level, even if the effect on wholesale price discovery were not immediately apparent. Similarly, policies aimed at influencing the determination of domestic prices, the stability of these prices over time, and the price differentials that are created across time and space would all have varied effects on the activities of wholesale markets (Timmer 1986). For instance, control of urban prices may imply that it is more profitable to ship goods back to less regulated production areas or store production outside the cities. Broader general equilibrium effects of policy are also of importance and impact on the structure and function of the whole marketing chain.

What is interesting to note is the interdependence between the process of price discovery and government policy operations. For example, in the case of formula pricing, a government may be able to use this as an easy way of administering prices (see, for example, Hayenga and Schrader 1980). However, a limitation may be that base prices are not representative, and increasing use of the formula will limit the sample from which an alternatively discovered base price is drawn (Tomek et al 1990). Administrative decisions on their own are an alternative to this, but even these rely on adopting prices close to the free-market values, or a high level of monopoly power in the market.

Discovery of Prices for Agricultural Products

Central to the role of the wholesale market, as outlined above, is the process of price formation. This process was seen to be fundamental to the continuing problems in wholesale markets by the Chinese Ministry of Commerce (Ding 1996). Often the same qualities are shown to give widely different prices, anecdotal evidence suggesting variations of several hundred percent were not unheard of. Large variations exist also from more easily explained causes, such as an enormous seasonal effect, and large differentials in provincial prices which follow from different production technology and marketing infrastructure. The prices between state-run and more autonomous markets are nonetheless claimed to be very similar, although it is hard to conclude this exactly as they often deal in different goods (Ding 1996). Watson (1996) observes that the prices in these markets generally reflect supply and demand, with government policies, in effect, acting to curb excessive price movements and speculation.

While the focus of this paper is on the wholesale market, it is useful to consider a range mechanisms for the discovery of prices for agricultural products. A number of surveys have been conducted in the area of the institutional arrangements used to establish the price of farm commodities, including Tomek and Robinson (1990) and Kohls and Uhl (1990). Five categories may be used to summarise these approaches: (1) informal negotiation or bargaining (private treaty pricing), (2) trading on organised exchanges or auctions, (3) formula pricing, (4) collective bargaining between producer groups and first handlers or buyers and between government agencies, and (5) administrative decision between both private and public agencies. It would appear that the movement toward the wholesale market structure is both a movement away from the first category, and the more interventionist modes of discovery that are typically ascribed to a planned economy.

It would appear that the price discovery mechanisms do vary somewhat among different commodities, or a combination of alternative discovery methods may be in place for the same commodity (Tomek et al 1990). When considering the difficulties and benefits associated with the formalised exchanges like wholesale markets, it is useful to consider some of the implications for other forms of price discovery. Individual negotiations will only approximate equilibrium prices if neither buyers nor sellers possess market power or if information is symmetric. The prices returned will tend to be in a range rather than a specific value, implying that price reporting becomes time-consuming and expensive (Tomek et al 1990, p203). Auction markets, to some extent, tend to facilitate the determination of prices for commodities that may be difficult to standardise. Physical inspection is facilitated by assembly of the produce, which can add to the expense of these operations. Collective bargaining solutions, such as selling through voluntary co-operatives, may benefit farmers but are subject to inherent free-rider problems (Tomek et al 1990). Tomek et al (1990) argue that this form of exchange will more closely approximate the equation of short-run supply and demand, especially where the volume of transactions is large, the quality of the produce is broadly representative of total production, unbiased information is available to all participants, and prices are above the government support levels (Tomek et al 1990, pp203-204).

One of the main difficulties associated with commodity markets is that of instability in prices due to speculation. This would appear to be a greater problem where buyers and sellers do not physically meet, and determining representative prices may be more difficult (Tomek et al 1990). An additional difficulty, the "thin market" phenomenon noted previously, is where aggregate supply and demand is not truly reflected by the trading on the market (Nelson and Turner 1995). That is, only a very small portion of the transactions determine the price. The thin market pricing imperfections may occur when the terminal market is viewed as a place for dropping temporary surpluses or by buyers when other sources evaporate (Tomek et al

1990,p205). Although empirical evidence on this phenomenon is inconclusive (Nelson et al 1995), there would appear a *prima facie* case for assuming inefficiencies where prices are formed in the presence of these distortions. It would also appear possible to overcome these problems by alternative methods of information provision, such as in electronic trading.

It is also useful to consider the possibilities of computer trading in more detail. Tomek et al argue that this is only likely to be successful where the commodities can be accurately described (graded), the equipment and its maintenance costs are sufficiently inexpensive, and that the products of descriptions are seen as credible (1990). For vegetables, these criteria may be difficult to obtain without a larger leap in technological innovation. It is possible that future markets as an alternative method of organising exchange are similarly limited by the difficulties in specifying futures contracts.

In most cases in China the levels of arbitrage are low, and conducted exclusively by the government, although there is some anecdotal evidence that this activity is increasing in the more entrepreneurial wholesale markets. The government retains much of its influence on trade flows by imposing heavy levies, taxes and fees on transportation. Notwithstanding this, transportation infrastructure is improving, and government control is declining. For example, total grain market is 445Mt, of which 100 Mt under government control, 170Mt brought by the government to the market, 150Mt commercial. That is, the government controls about a third of the grain market, the government buys only one tenth of the grain supply from the market, and the rest is exchanged in free markets (Ding 1996). This grain market development is of particular interest as the government is now trying to develop the wholesale grain markets as vegetable markets are largely seen as a success.

Rapid advancement of the levels of retail market of food in China has also put pressure on the development of wholesalers to become more open to market forces (Watson 1996). This has brought concomitant pressure to improve market facilities of services, communication and other infrastructure to support the wholesale marketing system. This has resulted in many clearly different types of agricultural wholesale markets in different cities, which have different stories to tell about the current status and future directions of the reform process.

"CHINESE CHARACTERISTICS"

Although this topic is of obvious importance, there has been very little research conducted on the structure and function of agricultural products markets, particularly by western researchers. While this is in some ways reflected by the lack of data available, it is also indicative of the dynamism of the Chinese food economy. There is still evidence of strong government controls in these markets, some of which will be discussed later, there is also good anecdotal evidence

of only a recent arrival of entrepreneurialism to this sector. This serves to highlight the timeliness of this analysis to an area which should be fertile ground for future research.

At this juncture, a caveat on reliability is in order. While every effort has been made to confirm statistics and to cross-check observations from independent sources, the exactness of the data that follow is obviously open to question. It is believed, however, that the figures and comments reported here are only those which show a reasonable consistency with those from other sources and, while exact figures may not necessarily be correct, they are illustrative of the points being made. In the absence of alternatives, this seems the most appropriate way to provide initial information on this important topic.

To develop these observations, the authors visited a number of wholesale markets in Beijing, Nanjing, Guangzhou and Shanghai in June and July 1996. Language and cultural barriers made the use of formal surveys impractical; however, efforts were made to gather consistent information on the size and function of these markets in different areas, as a background to more formal analysis. Although these findings were somewhat *ad hoc*, and at times difficult to verify, the principal observations of the more interesting of the case studies are presented below.

Case Study 1: Beijing

There are at least four major wholesale markets that provide food to Beijing. In the North it is the Dazhongsi Agricultural Products Wholesale Market (mentioned in Watson 1996), and in the South Huaken Yuegezhuang Wholesale Market, Xinfadi Agricultural and Side-Line Products Wholesale Market and the neighbouring state-run Central Markets. Currently, it is the first three that appear to supply over 90% of food the Beijing, with Dazhongsi commonly cited as being the largest, followed closely by Yuegezhuang and Xinfadi, with the latter having a larger share of the quality meat and aquatic products markets.

Structure and Performance

The Dazhongsi Agricultural Products Wholesale Market in Beijing is one of the largest in China, and arguably the most important in Beijing. This market was established in 1986, following the government's relaxation of price controls for many foods in 1985 and the "open door to Beijing" policy (Dazhongsi 1994). Similarly, the Huaken Yuegezhuang Wholesale Market was formed only in 1986, built on the land of the Yuegezhuang Village and financed by the Ministry of Agriculture. Through close co-operation with the Ministry of Agriculture the latter market is to receive special funding from the World Bank (US $3,000,000) for development of their facilities. A more transparent example of co-operative ownership in

Beijing is in the Xinfadi Agricultural and Side-Line Products Wholesale Market, established in 1988 (Xinfadi 1995). Xinfadi is the 3,000 member Village co-operative that owns the land on which the market resides, and to which the managers are accountable. While these markets are all of similar age and supply large shares of the Beijing market, Dazhongsi is a recognised leader in this city in terms of price and innovation; however, increased government backing of Yuegezhuang, particularly its focus on higher valued goods and more modern infrastructure, may soon change this. There is little interaction between market managers, except an informal arrangement to get together once a year to discuss common issues.

The value of sales from all these markets has grown substantially from year to year. For Dazhongsi, for example, initially sales were minor but they grew to an average value of 27.9 million Yuan (US$5.34 million) per month in 1991, 113 million Yuan in 1994 (US$13.36 million), and 253 million Yuan per month in 1995 (Dazhongsi 1996). Yuegezhuang is also said to be trading approximately one billion kilograms per year, or in value terms about 2 billion Yuan (Huaken Yuegezhuang Wholesale Market 1996). In Xinfadi, the expected annual turnover for 1995 was 1400 million kilograms and 1050 million Yuan (Xinfadi 1995). Vegetables account for the majority of sales in the Dazhongsi market, at times approaching 80 per cent of the volume of turnover, while fish, fruits, meat and poultry are the next most important followed by grains and edible oil (Dazhongsi 1996). There is almost no storage, apart from a cold room which is used for aquatic products, and no retail sales. Dazhongsi is thought to serve about 30% of Beijing's vegetable requirements, compared with the 20% figures for 1992 reported in Watson (1996). In a similar manner, Yuegezhuang deals mainly in vegetables; however, it has a strong interest in aquatic products and pork through the development of large, special purpose, food halls. Vegetables account for over 50% of all products sold, fruits over 20%, then meats, aquatic products, grains and oils. In contrast, Xinfadi is exclusively a vegetable and fruit market, with no storage facilities for meat or aquatic products. They also claim to serve around 30% of the Beijing vegetable markets, with 90% vegetables, and the remainder fruits, grains and oils, and meats and eggs.

Dazhongsi is seen as a reasonably large employer for such a market, with currently around 500 workers. Similarly, the management of Yuegezhuang consists of one general manager and five managers who oversee the conduct of about 550 workers. In Xinfadi, there are a general manager, 4 managers, and around 115 other employees. With regard to fees for supporting their management services, in Dazhongsi, sellers are required to pay a trading fee, which in line with government regulation, can be up to a value of two per cent of their turnover. In 1995 their annual revenue was around 22 million Yuan (Dazhongsi 1996). However, the markets often charge discount rates to encourage new sellers and attract participants from other markets (Dazhongsi Wholesale Market 1994 and Xinfadi 1995). The Xinfadi and Yuegezhuang management structures are both supported by a lower 1% fee on sellers.

All three of these markets have a large geographical reach. The participants in Dazhongsi, which include state, collective and private enterprises, reputedly come from over 600 counties across 28 provinces (Dazhongsi Wholesale Market 1994). Similarly, Xinfadi draws sellers and buyers from all over the country, averaging around 10,000 to 20,000 buyers and sellers per day, although around 60% of this activity is retail. Dazhongsi has an operation in Shandong province, a rural centre outside Beijing, which allows closer access to the producers. All markets compete to attract buyers and sellers through the provision of information packages, food, medical, financial and accommodation services, security and contract enforcement, assistance in transport and handling, and even branch markets in provinces (Xinfadi 1995).

With regard to vertical integration of markets, the experience here seems limited but growing. There is some co-operation between Dazhongsi and food processing factories, most in meat (especially pork) processing. This movement into vertical linkages appears aimed at eventually stopping the smaller sellers from remaining in the markets. These processed goods are sold mainly in Beijing, for example, cooked meat with designer packaging. The Dazhongsi market also owns twelve discount retail vegetable markets, and is establishing a centre for special (Chinese) vegetables at Daznon[illegible] exploit a niche market provided by Beijing's growing restaurant trade (Dazhongsi 199[illegible] The latter will draw vegetables from all over China, and specialise in the more exotic or wild vegetables demanded by the biggest restaurants. They are also trialing a delivery centre project, which direct sales around 200 tonnes of vegetables per month to over 30 corporations and institutions in Beijing (Dazhongsi 1996). Similarly, in processing, Yuegezhuang has a 300 tonne cold room for meat and aquatic products, but it does not at this stage do the actual freezing and processing on site. Transport activities were restricted to the air-freighting some high value vegetables and the delivery of local orders.

When asked about future directions for their markets, the managers of all three markets perceived a shortage of experience in their staff, specifically when coming to terms with a market-environment, as being one of the key weaknesses of their current enterprise. Reforms to management and labour relations were common themes in Dazhongsi and Xinfadi, and were seen to be promoting productivity, accountability, and wage flexibility (Dazhongsi 1996 and Xinfadi 1995). They were also all concerned about the level of infrastructure in their markets, and were in the process of expanding, initially their office facilities, and later working on future infrastructure development. The Yuegezhuang manager also perceived major problems from a shortage of capital, exacerbated by high interest rates and heavy tax levels (20% to Beijing government alone). Xinfadi, on the basis of reasonably healthy profits, was less concerned about this, as it intends to use its assets to invest in cold storage for vegetables, fruits and aquatic products, possibly further packaging and processing. The major threat to this latter

market already planned, as it was [illegible] government from taking-over the site for a new, larger food market.

Regulation and Government Intervention

The role of government intervention in these three markets was claimed to be minimal, and perhaps best encompassed by the somewhat intangible notion of how supportive the government was perceived to be of the development of the market by the managers. Yuegezhuang, for example, appeared to be subject to greater government influence, as was observed in the securing of the World Bank capital; however, as it was also more secretive about its activities. Conversely, in the case of Xinfadi, there is an obvious sense of rivalry between the village and the central government, especially over the issue of the control of the site. In Dazhongsi, it is interesting to note that the local government is very active in both promoting the market, and modifying its structure. In 1995 the city council arranged for Dazhongsi to establish direct sales relationships between this market and those in the provinces to increase turnover, supply and the variety of foods available. These arrangements involved agreements among markets and a variety of government bodies through the government sponsored Second Vegetable Products Marketing Conference in November 1995 (Dazhongsi 1996). Boarder areas of government influence, such as in infrastructure development, are also important. The Dazhongsi Annual Report for 1996 notes that police barricades on highway and excessive transportation fines and charges, are posing particular difficulties to members of the Dazhongsi Circulation Association (Dazhongsi 1996). Roads were also observed to be too narrow and congested around the market to permit buyers and sellers through.

Price Discovery

The announcing of prices is not very advanced in these markets, despite some recent innovations. In all markets average daily prices were available by phone to producers, and were occasionally included in television broadcasts. The Ministry of Agriculture, which keeps a large national database of vegetable price movements for traders, also supplemented this process by reporting weekly prices in farmer newspapers (Xinfadi 1996). In Dazhongsi, perhaps the leader in using new technology to announce prices, the recent erection of a billboard-sized television has meant that daily prices are now displayed outside the market. Additionally, a facsimile service and a Dazhongsi newsletter were being introduced to support this communication process. A new database and information network with nine other government information centres and other agricultural trading companies is also being developed (Dazhongsi 1996). All markets were generally prepared to volunteer these prices to one another, both Yuegezhuang and Xinfadi purporting to send prices to Dazhongsi on a regular basis.

In all markets the supply and demand were claimed as the main determinants of these prices. Differences between wholesale and retail prices are very seasonal; however, they perceive little difference in day to day prices. According to the managers at Xinfadi, prices are decided mainly by the bargaining of large buyers and sellers. There is good anecdotal evidence of growing consumer sovereignty, such as a small retailer at Xinfadi complaining that the market is competitive and the consumers are picky and prudent" (Xinfadi 1996). Of perhaps greater interest is the degree of co-ordination between prices in these markets. Some markets are perceived to be cheaper for a small selection of specific goods, but generally differences in prices are seen to be mainly transportation costs - and while arbitrage may be useful for addressing small market imbalance, it was generally not seen as a profitable enterprise.

Case Study 2: Nanjing

The old capital of China, Nanjing, supports a smaller population of around 4.5 million people. The city is an important industrial base for the Chinese motor vehicle, electronics and machine tool industries, whose populous is served by a number of smaller food markets. The principal two wholesale markets in this city are the Beiyunting Agricultural Products Market and the Zijinshan (Purple Mountain) Agricultural Products Market.

Structure and Performance

The Nanjing Beiyunting Wholesale Market for Agricultural Products is a privately-owned enterprise managed by the Nanjing Beiyunting Market Development Company (Beiyunting 1996). Founded in 1984, it is expanding rapidly under sponsorship from the district government administration. Zijinshan Market, which is on the western side of Nanjing, is fully state-owned and controlled by the Vegetables Department of the Ministry of Agriculture. Founded in the early 1990s, its most significant growth has come in the last four years. The Nanjing Beiyunting Wholesale Market for Agricultural Products is what the managers refer to as a "second class market", that is, it draws its supplies from smaller traders who buy directly from producers, rather than deal directly with producers, and is not involved in retail. Like Xinfadi, it deals mainly with vegetables, which account for over 95% of its trade. The remainder is mainly grains, with a small amount of aquatic products, which is facilitated by a limited amount of cold storage (30 tonnes) (Beiyunting 1996). This market has the largest throughput of all markets in this city, trading 1,090 million Yuan per year and 1,030 million kilograms of product in 1995, which accounts for 60-80% of Nanjing's demand (Beiyunting 1996). In contrast, the smaller Zijinshan Market trades a much wider variety of products. While again this is mainly vegetables (80%), it also deals in poultry and eggs (15%), and some drinks (alcohol, wine, beer), aquatic products, meats and fruits. The total value of all commodities

traded has risen from 30 million Yuan in 1992 to the 1996 value of 150 million Yuan. This market supplies the consumption needs of closer to 15% of the city's population.

There are 20 managers and 50 active workers in the Zijinshan market. On average, 2,000-3,000 traders use the market each day, with around 95% of the products coming from other provinces. In the larger Beiyunting market there are around 550 workers including 4 managers and a general manager. In both markets trading takes place around the clock in summer, while in winter, business is conducted only during the day. This activity is supported by strictly regulated management fees which have to be spent on developing and maintaining equipment and facilities, cleaning, and administration. The maximum levies allowed are 2% of the value of transaction, as is implemented by Zijinshan. The Beiyunting market charges both buyers and sellers less than 1%, in times of shortage reducing or removing the levy on producers. Some special classes of customers are also given discounts; such as soldiers, universities and disabled individuals (0.3-0.5%).

Beiyunting is not involved in transportation at this stage but may do this in future. The government wants this market to get more heavily involved in on-site packaging, freezing and processing of raw commodities. Interestingly, the management is reluctant to expand in this direction as it does not believe that customers desire anything beyond fresh foods at this stage. Most processing taking place at the first level only, for example, dried fruits and vegetables. The market has established long-term supply agreements with 1300 traders in over twenty provinces in China (Beiyunting 1996). Beiyunting was more expansionary, and was hoping to develop a group of wholesale markets, with a hotel (nearly completed), restaurant, and an expanded range of commodities that includes grains and fruits. It is also worthy of note that the market, like many others, has one of its objectives to develop broader economic and social conditions of Nanjing and its vicinity (Beiyunting 1996 and 1994).

Regulation and Government Intervention

There is some direct intervention in the retail side of vegetable markets in this city. A few commodities (around six) in each season have their prices controlled by the Price Bureau. These are commonly set as wholesale price plus 30%. For example, in summer, Chinese greens, Chinese cabbage, tomatoes are controlled items. By way of comparison, for other commodities in Zijinshan, prices for retail were 50 to 150% higher than the wholesale prices. Notwithstanding this margin, the basic price levels are highly seasonal.

It is interesting to note that despite its emphasis on market-led growth, the Beiyunting management saw the stabilisation of market supply as an important objective. The management

claimed to be able to assist in doing this via its control on prices and quantities, as well as the availability of information (Beiyunting 1996).

Price Discovery

At Beiyunting prices are arrived at by bargaining and the previous days prices are displayed on a large blackboard to form the basis for subsequent trading. The managers suggested that their prices are a little lower than some of those in the other markets, and about 30% of the buyers take produce from here to the smaller markets such as Zijinshan. While 95% of its business is wholesale, it claims that the change in price from wholesale to retail is around 100%. Markets in Nanjing share price information via the city government's computerised Vegetable Price network. These provide information to the central government and allow the other markets to view one another's daily prices and quantities of sales of key vegetables across the city.

Case Study 3: Guangzhou and Shenzhen

There are an intriguing mix of wholesale markets in the southern cities of Guangzhou, and its neighbouring special economic zone city of Shenzhen. As both have ready access to nearby Hong Kong, the variety of foods available are more familiar to western observers. In particular, there was a high level of imports from other countries. There also appears to be a mix of more local, state-owned markets (similar to Zijinshan in Nanjing), larger, showcase markets, and highly entrepreneurial markets (similar to Dazhongsi). Shenzhen, in particular, contains a large proportion of higher income consumers from the booming special economic zone, and has one of the largest population growth rates in the world, averaging 45% per annum in the last decade (Lonely Planet 1994).

Structure and Performance

Of the smaller, state-owned markets is the Tin Ping Fruit Wholesale Market in Guangzhou. This market started as part of a more comprehensive agricultural market which began in 1986, separating in 1989 to focus almost exclusively on fruits. The land on which the 11,000 mu (730 ha) market stands is owned by a local village, the government providing the administration of the market. This focus on fruits makes this market more specialised than others in the city, especially the more famous Qing Ping Agricultural Products Market. Established in 1979, Qing Ping is a showcase of "comprehensive" marketing. The market covers an enormous range of products, physically including a network of produce stalls that criss-cross many avenues and lanes of the older part of the city in Guangzhou.

In Shenzhen, by stark comparison, is the Buji Market, run by the Shenzhen Agricultural Products Share Co. Ltd. Established in 1987, this market has developed very quickly and been the subject of some keen government attention. It has no state ownership although the government has contributed to its initial capital, along with private investment from seven large private enterprise organisations which contributed (Hua and Fan 1993). The Buji market is possibly the largest in China, although making a definitive statement may not be possible with the markets we sampled.

In Tin Ping there are around 400 sellers using the market each day, utilising 144 separate stands. Around 200 trucks come each day from buyers, with about 7,000 to 8,000 wholesalers buying here each day. On average they would trade around 500 tonnes daily of fruits from all over China, at an average price of 2Y/kg (around 365 million Yuan per year) (Tin Ping 1993). In Tin Ping they only import fruit products, from mainly Thailand and also more widely via Hong Kong. There are two other fruit markets in Guangzhou of similar size with Tin Ping being about middle in terms of price. There is some trade between the three markets, especially in the imported foods (for example, apples). While Qing Ping was obviously more comprehensive in format it is difficult to obtain information on their product mix. They claim to have traded 55 million kilograms last year, at a value of 780mY. However, it was unclear to what extent this reflects a trade in non-food products, or retail sales, which were also in evidence.

Compared to the other two, the size of the Buji market is massive, possibly being the largest distribution centre in China (Hua and Fan 1993). The market supplies all of Shenzhen City - a population of around 3.5 million, but clearly also has a much extended geographical reach. In 1995 it reported exchanging 115 million tonnes of goods valued at 5.6 billion Yuan. The trade in this market is also comprehensive - dealing in around 2,000 kinds of commodities, with about 10% of these originating from overseas. However, the main focus remains on vegetables, then fruits and other agricultural products. The market has agencies within it for 26 Provinces and Hong Kong, which act as buyers for a wide variety of these products. They are very important suppliers to Hong Kong, supplying 60% of the primary traded agricultural goods market to this country. As an example of this distribution, it was noted that on average 1,300 tonnes were exchanged each day, with 800 tonnes going to Shenzhen, 200 tonnes to Hong Kong, and 300 tonnes to other provinces. By contrast, for fruits they would mainly supply locally except a limited range of specialist products, for example, lychees and honeymelon, which are exported. Importers in their market also import directly from Australia: grapes, apples, pears, chicken, kangaroo, ostrich. They export lychees, honeymelon, pears, to Southeast Asia and South Africa.

Tin Ping has 4 managers and employs 13 security staff. The four head managers are from the government, with the other managerial staff coming from the villages and private employers. There are also 42 workers involved in cleaning, handling, and other customer services throughout the 24 hours of operation. By contrast the Buji market itself covers two levels including 36,000 m2 of fruits, which is being expanded this to 80,000m2 in near future. Their main staff include 80 managers, 4,000-5,000 service people, and wholesalers (3,000-4,000). Around 5,000 trucks of buyers come through this market each day (about 10,000 people), which is operating 24 hours a day.

This infrastructure is supported by the customary management fees, the Tin Ping market charges 1.5% of the value of the transaction on both producers and consumers. This amounts to around 8 million Yuan/year, and around 1 million Yuan of this is spent on wages, costs and investment. After costs the remaining is split 30% to government and 70% to villages, the latter using these funds to make "social contributions" to other projects which are not necessarily related to the market (Tin Ping 1993). The Qing Ping market charges the more familiar flat rate of 1.5% to 2% of the value of transactions, only charged to sellers. In an interesting departure, the Buji market does not charge on the value but on floor area occupied. The current rate is 7 Yuan/m2/day plus an additional rent of 40 Yuan/month/m2. The producers also have to pay a value added tax to the government, but this does not go through the market.

The Tin Ping managers are not really interested in developing any relations with other wholesale markets, and take a more parochial view of their operations. When asked about their future plans, they indicated a desire to expand and modernise their facilities. While increasing their area somewhat they were having difficulties in securing financing to build roofing to permit all-weather trading and cold storage. Developing standards and procedures for management to provide a civilised, safe and stable trading environment was also seen as important (Tin Ping 1993). In contrast, the Buji market was already rapidly expanding, primarily to service the future greater access to the Hong Kong markets, developing an entirely new site with larger facilities for trading, dry storage, and the potential for greater use of cold storage.

Regulation and Government Intervention

As with other markets, there appeared little evidence of direct government intervention in prices. Being state-owned, the Tin Ping Market appeared to have the lack of clarity in management objectives that was highlighted previously as being ascribed to perfectly regulated markets by Xu (1996). Beyond this, however, direct intervention in prices was not noted. Shenzhen, being a special economic zone, was the most liberated of all the markets visited, showing very little sign of government involvement in management. As even the funding for

this venture was largely independent, indirect controls were also assumed to be minimal. The differences in the performance of these markets, even when comparing the massive Buji and Dazhongsi enterprises, would, at least superficially, attest to the way that government regulation of other markets may have inhibited their development.

Price Discovery

In all markets they indicated that prices were arrived at by bargaining. In Tin Ping and Qing Ping there is some mixture of wholesale and retail, which normally amounted to different prices depending on how much was bought, the former being mainly wholesalers, with a high incidence of retail in Qing Ping. Buji was primarily wholesale in its trade, and indicated that it had a highly competitive price discovery process.

Case Study 4: Shanghai

Shanghai, being the largest and one of the most industrialised cities in China, is an interesting study in food distribution. Higher incomes have meant that the food products are often more elaborate and come through a wider variety of marketing channels, which may account for the main and largest wholesale market not having the same market share as similar size ventures in Beijing. This is also partly explained by the presence of initiatives by the municipal government to funnel in food from outside the city.

Structure and Performance

The largest wholesale market in the city is the Caoan Wholesale Market, which supplies around 20% of Shanghai's vegetables. The managers of Caoan believe that there are only 10 markets of this size in the country. The government has 5-7 state-owned markets which are much smaller, often in regional areas. Caoan exists as a product of government and business co-operation, and is governed by a "Committee of Holders" of 7 people. The market employs around 300 staff in total. Surrounding Shanghai are a number of rural areas with their own market structures that help service the city. One such area is Xuncheng Town in Nanhui County on the Eastern Side of Shanghai. In Xuncheng Town there are plans to form a major agricultural market, although this will be mainly retail (1.4 ha). At present, the town and village enterprises are combined as an official unit providing a very small market for fruits, vegetables, and agricultural side products (peaches, watermelons). The main products sold by the Caoan market are vegetables and grains. This also includes around 200t/day of grains, 500 pigs a day of pork, and a small amount of fish. The total value of exchange rose from 40 million Yuan in 1992 to 560 million in 1995. The vegetables are drawn from 20 provinces, with around 30% of these actually coming from Shanghai. Unlike Guangzhou there are no imports from overseas.

Aside from the vegetables traded in Xuncheng Town, it is interesting to note some of their other activities. Better transport infrastructure has led to a higher level of trade due to their proximity to Shanghai's deep ocean port, the soon to be opened second international airport, and these projects' related transport links. For instance, the Town has some exports of selected flowers, fruits to Japan and Hong Kong through joint ventures. They also sell some local vegetables to other provinces, although they are not directly involved in production themselves.

Of the estimated 3,400 food trucks in Shanghai, Caoan has around 700-800 through their markets each day - roughly equating to 5,000 to 6,000 buyers and sellers. The buyers are a mix of wholesale and retail, with probably around 60% falling into the wholesale category. To service these customers the market also collects fees, in line with slightly different government regulations which allow levies of 4% of the value for vegetables and 0.8% of values for grains. Everyone entering the market grounds is also charged 0.5 Yuan a head for entry to the premises. In the Xuncheng Town markets, fees are charged at the more common rate 2% of the value of transaction, levied on sellers only. The retail market is run by 4-5 managers, who are supported by fees based on "seats" or selling space. The standard for these fees are around 600 Y/month/5m2. They spend virtually all the income from this market on wages, salaries, maintenance and cleaning. There are only 7 people in the market, made up of 2 managers and 5 support staff. No fees are spent on new investment, major investment projects like the proposed new market coming directly from the government (around 10mY).

Despite good growth and government support, the Caoan manager suggested that there were three major problems facing the market. The level of management expertise, the quality of the service, and the need to improve the physical security of the surroundings. The Xuncheng Town market complains of a shortage of capital for operations. This and the infrastructure problems are compounded by the distance to the central city markets. It is not seemingly possible at this stage for this market to move out of its production area.

Regulation and Government Intervention

The Xuncheng Town produces both food for its own use and food for the city. Those produced for the city fall under the auspices of the Shanghai City Municipal Government's "Shanghai Vegetable Market Basket Project", which co-ordinates growers in different regions around Shanghai. There are both wholesale and retail markets in the Xuncheng Town that service this activity. The city's programme exists in Shanghai due to the size of the city's industry and its massive population. The municipal government is seeking to guarantee food as in the past it has been adversely impacted by increases in demand from other provinces. The Town and County Governments are jointly responsible for wholesale through the "Vegetable Office" of the Town

government. The Vegetable office is the employer of the four managers that run the Xuncheng Town wholesale market.

The Xuncheng Town market managers see this intervention as exacerbating the main problems of transport and storage infrastructure. If the market oversupplies it cannot sell the residual to the regional markets of the Municipal governments, and therefore has to transfer these products itself into the cities at a very high cost. Similarly, it has no cold or dry storage and can have high losses due to spoilage (for example, it once lost up to 50% of a green vegetable crop). While an Israeli firm has invested recently in a two-room cold storage facility in the area, this is seen as insufficient to make a major difference. Coupled with this issue are the variances between free and open markets in the counties around Shanghai. For example, in some seasons supply is seriously low, meaning that the Town government will have difficulty collecting the whole amount required by the Shanghai Municipal Government. During this time farmers have a strong incentive to sell on the free market - resulting in the government having to pay more to retrieve it.

Price Discovery

The managers of Caoan claim that Shanghai is cheaper compared to Beijing because it has a better growing climate for a larger local production area. However, the Xuncheng Town managers conceded that arbitrage was not uncommon and could be profitable. As much as two thirds of the products are transferred from their first level markets to second level ones that service Shanghai. The management at Caoan argues that the prices in Shanghai are fairly stable as it is able to draw from a range of production regions and because of the control by the government on the prices of grains. They also suggested that the profits from wholesaling might be lower here than in other cities, and that especially the profits to be obtained from trading in meat was very low due to the weak nature of consumer demand for these products.

In Xuncheng Town market prices are perceived to be determined by free-trade in the smaller markets; however, for those servicing the Market Basket project the pricing system is more complicated. This consists of wholesale prices for "peddlers" and higher prices for local citizens. Prices in the wholesale markets are regulated by the Vegetable Basket Project, which provides for specific offices to monitor and manage supply and demand for key commodities. The government gives different guarantees on prices to producers of different commodities in various counties, in return for guarantee on the flow of production. The term "Basket" relates to a collection of main vegetables, chicken, pork, fish, eggs (excluded beef, rice and fruits). Vegetables and pork have the highest level of price control, as they are perceived to have the largest share of daily consumption. Notwithstanding this intervention, significant seasonal

variations in Shanghai's food prices were again noted, with large differences between wholesale and retail levels.

SYNTHESIS

The preceding survey contains a great deal of detailed information on a select group of markets across China. From this, some general observations from our conceptual framework on wholesale markets, of the "Chinese Characteristics", can be drawn. Central to this discussion is the recognition that the Chinese markets are as evolutionary as their western counterparts, if not more so. Although the current stage of development is reasonably low, all markets are growing rapidly and have changed significantly over the last decade.

With this rapid growth has come an expanded number of marketing functions in the larger cities; however, these still were typically not as complex as those seen in western markets. Information systems, handling, and packing were rudimentary or non-existent in all case-studies. Marketing channels were also very limited, often with the wholesale markets existing as the sole link between producers and consumers (especially in the smaller cities). While some markets focussed on a limited range of products, the general tendency was not to specialise in a traditional "Limited Line" sense. Although a few markets were attempting to establish special sections for high value produce, they were still trading large numbers of other products. Similarly, those markets which currently traded only a limited range of fruits or vegetables were expressing a desire to move into a broader range of commodities.

In keeping with this general line approach, the wealthier markets were steadily expanding in size, developing regional sub-branches, and making limited forays into mechanisation, information technology, non-food lines, value-adding and retail ownership. Although these developments are still generally in their infancy, this would seem a good indicator of future directions. Formal development of marketing chains through vertical integration was not observed, although the more entrepreneurial markets were looking toward this possibility in the future.

As would be expected with this current emphasis on the general trading, there was also no evidence of the thin market problem, as it would appear that the general trend is still one of centralisation of markets, rather than decentralisation. In this case, the wholesale markets would appear to remain the main fora for price setting. Sellers are generally not very sophisticated in their dealings with these institutions and poor storage and handling facilities require that the vast majority of produce still be moved to markets for price discovery. Current investment plans in the markets are not likely to reverse this trend. Indeed, rather than attempting to address these

limitations current investment priorities appear to be in developing buyer services *in situ*, such as accommodation and administrative support, in a manner that may further encourage centralisation.

The key question, when discussing the nature of the prices formed in these markets, given that a large volume is traded through them, is the nature of government distortions. While the regulation versus transaction volume distinction of Xu (1996) was observable, the impact of state ownership on price discovery would appear to be limited. State-owned markets appeared to be generally smaller, less entrepreneurial, and suffering a malaise of complex administrative arrangements; however, this did not seem to influence their actions in price setting. In all markets informal negotiation or private treaty bargaining appeared the main process of price discovery. The only direct policy that was often referred to was that Vegetable Basket Project or its variants, which is worthy of closer examination.

The "Vegetable Basket Project [or Plan]" is the title of the set of policies which continue to hold a high level of central government support in this area. As Hua and Hill (1996) note "its main purpose is to increase the supply of agricultural products both in the large towns such as Beijing, Shanghai, Guangzhou and Chengdu and in the agricultural, but rapidly industrialising provinces such as Guangdong, Sechuan, Shandong and Henan". Conceived in 1986, and fully implemented by 1989, the main philosophy underlying this instrumentation has been to develop wholesale markets for fruits, vegetables, and agricultural-based products. The primary resources for this is via investment by urban centres, as these markets are designed to facilitate a greater flow of food from rural to urban areas (Watson 1996 and Hua et al 1996). Although it was most active from 1987 to 1989, the key elements of the Vegetable Basket Project remain in place today, and continue to be influential. It is important to reinforce that the aim of this project is not to sweep away market forces, indeed the current incarnation appears to give producers considerable freedom to sell in a range of markets, only impacts on a limited range of products, and focuses on controlling wholesale-retail margins, rather than the wholesale price directly. While the results of this project have served to increase production and sale of agricultural products, and improve the supplies of fruits, vegetables and other perishable products to the cities (Hua et al 1996), it is also likely that some of the specific initiatives were pivotal in the rapid growth of these structures.

The wholesale food markets, therefore, reflect a very important and growing part of the Chinese food circulation system. Currently, they appear to be following the conventions of the western model of a general line centralised wholesale food market, if only at an earlier stage of development. It would be expected that in the future there will be increased evidence of marketing chains lengthening, an increasing use of these centralised and organised exchanges in price formation, improved geographical reach and market integration, better commodity

separation, and a growing expertise in the dissemination of market information. These characteristics are seemingly evolving with steady sponsorship from the government.

CONCLUDING COMMENTS

As indicated in the case studies, growth in these markets has brought with it some difficulties and opportunities. It would appear that there is some agreement between our own observations and those of other authors on these matters. These include the observations by Hua et al (1996) of the lack of integration between disparate markets which makes both price discovery and nation-wide distribution difficult, the continued dominance of small scale farmers and traders, the persistent shortcomings of facilities and infrastructure, the unclear market rules and systems of operations, and the deficiency of effective market information systems. Hua and Fan (1993) note also the importance of appropriate placement of these markets, and the way that they are often handicapped by being located somewhere on the grounds of historical precedence or political factors. Xu (1996) adds to this the difficulties associated with uncoordinated and overlapping administration by different authorities, and "arbitrary interference in management by government departments". It would seem, however, that the future development and implementation of these policies is inextricably linked with the future development and performance of the agricultural wholesale markets, and their Chinese characteristics.

While the descriptive nature of the survey of these markets has meant that any analysis is necessarily *ad hoc*, the previous material provides some intriguing insights into the experience of the rapidly developing wholesale markets in the Chinese food economy. The focus on these institutions in policy actions and recent pronouncements by the central government suggest that these markets will be pivotal to the structure and conduct of food markets in China's future development. The dynamism in this development also suggests a number of broad observations on the particular characteristics of these markets.

Firstly, it is important to reinforce the notion that these markets are only in their earliest stages of development. They have also been derived from varied initial stages of ownership and development, exhibiting different focuses and diverse levels of managerial prowess. Despite this, they do generally display all the characteristics of a developing centralised wholesale market in a capitalist country. Their uniqueness, if any, might lie in the difficulties that they are encountering in this stage of development. These include the level of infrastructure available to support markets operation, transfer and storage of produce, the shortages in capital for further market investment, the dearth of experience in market operation and appropriate fora for professional interaction by the managers and, finally, the difficulties associated with the location of these markets being largely determined by political actions or historical precedence.

Secondly, it is also essential to realise that, despite the significance of these difficulties, the number of these markets, and their share in supplying Chinese consumers, are substantially increasing. As these markets are also rapidly developing their information technology, there is now increased opportunity for economists to be more involved in more rigorous and empirical analyses of the nature of Chinese food consumption. Additionally, there is also a significant number of opportunities for other countries to be involved in providing the expertise that is in such demand by this sector. Similarly, there is also an important role for policy development in this bastion of free-market competition to assist in developing of appropriate institutional frameworks.

In summary, the understanding of development of wholesale food market with "Chinese Characteristics" will be of increasing importance as the Chinese food economy develops, and as more and more of the system of circulation of agricultural products comes to depend on this model. The problems experienced by many of the markets would appear insignificant to prevent their role from expanding in the near future. These markets are therefore possible keys to analysing future food demand and consumption patterns in China.

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