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Vegetable sales activities of secondary wholesalers in China

- A case study of the Dongwayao agricultural products wholesale market in Hohhot -

ZHAO Liming
(Shanxi Agricultural University ; Hokkaido University)

Abstract

Alongside growth in China's market economy, vegetable circulation is evolving into something that is wide in reach and large in scale. To some extent, these changes in the circulation channels are meeting the urban need for a stable supply of vegetables; however, they have also generated a new problem: the contradiction between the large-scale circulation conducted by primary wholesale markets and the small-scale buying pursued by small retail stores and restaurants. Against this background, an increasing number of secondary wholesalers have been emerging as a part of the wholesale market.

Based on a survey of these secondary wholesalers, this paper analyzes the important role that they play in nationwide wholesale-market-centered circulation, which is to moderate the contradiction between mass distribution and small-scale buying.

1. Introduction

Alongside geographical expansion and increases in the scale of fresh food circulation channels, on the wholesale market, the sales method of large-scale, *primary wholesalers* have recently moved away from traditional low-volume sales and shifted the unit of sale to the *full container load*, (FCL) [s1] a change in wholesale transactions that helps to shorten the transaction time and speed up circulation. However, this has also generated a new problem, in that small retail stores and restaurants tend to buy in smaller volumes, which makes it difficult for them to have dealings with primary wholesalers. Against this background, in addition to the primary wholesalers that have begun to undertake large-scale, nationwide circulation of vegetables, there are also an increasing number of *secondary wholesalers* specializing in small-volume trading on the wholesale market. These secondary wholesalers mainly purchase their goods from primary wholesalers, and then sell them to small retail stores and other establishments with low volumes of demand. Thus, the secondary wholesalers, in their goods-dispersion function, fulfill a supplementary role to the primary wholesalers in nationwide, wholesale-market-centered circulation.

Some experts have researched the sales behaviors of such secondary wholesalers. AN [1] analyzed the purchasing and sales activities of vegetable wholesalers and pointed out their leading role in the wide-reaching vegetable circulation in the mid-1990s in China. OSHIMA [2] found that apple wholesalers in the production and consumption areas continued to expand their operations through division of roles and cooperation, improving their status and influence in large-scale circulation in broader areas. SONG [3] studied the functional changes of wholesalers in production areas and noted that they expanded their scope of business from procurement to sales during the scale-up process. Meanwhile, the cooperative relationship between wholesalers in production and consumption areas has become a competitive one. WANG [4] researched the internal organization structure of large-scale wholesalers and pointed

out that small-scale wholesalers and peasant households formed economic organizations through financial support, service supply, and other means to accommodate large-scale circulation in broader areas.

As is clear, many scholars have focused their research on the business activities and functions of the primary wholesalers at the center of the nationwide wholesale market. However, little has been said about the role that secondary wholesalers play in the circulation in this broad area. Thus, in this paper, we have taken the Dongwayao wholesale market as sample, and explore the role that secondary wholesalers play in the nationwide circulation through an analysis of their sales behavior.

2. Materials and methods

2.1 Study Area

The Dongwayao wholesale market (known as the Dongwayao agricultural and sideline products wholesale market), located in Hohhot (the capital of Inner Mongolia in China) is the subject of this study. The population of Hohhot is about 3 million (at the end of 2013) and nearly two-thirds of the local residents live in the central area of the city. According to data from Hohhot wholesale market officials, the total consumption of vegetables in Hohhot was about 73,000 tons [s2]in 2010, and all these vegetables circulated through the city's wholesale markets. The four wholesale markets in Hohhot, in chronological order of establishment, are the Dongwayao wholesale market (1986), the Huidong wholesale market (1999), the Meitong logistics center (2005), and the Shuangshu wholesale market (2008). Of these, the Dongwayao wholesale market and Meitong logistics center are certified by the Ministry of Agriculture. The present study focuses on the Dongwayao wholesale market.

As one of the first of the 24 wholesale markets to be certified by the Ministry of Agriculture (in 1995), the Dongwayao wholesale market is in an important consumption area and has a vegetable trading volume that accounts for 70% of Hohhot. From this point of view, an empirical analysis of the Dongwayao wholesale market, to a large extent, is capable of reflecting the status of many consumer markets in China.

2.2 Study Method

The research method adopted in this paper is mainly interview-based surveys. The vegetable sellers at the Dongwayao wholesale market are divided into three major categories: primary wholesalers, secondary wholesalers, and farmers (here, this means peasant households that grow and sell their own vegetables). As shown in Table 1, the greatest points of divergence between the primary wholesalers and secondary wholesalers can be broken down into three points. First, the business scales of the primary and secondary wholesalers are different. The data on the scales of business shown in this table represents the weighted average values of interview data from 10 primary wholesalers and 12 secondary wholesalers. On average, the daily sales volume of the primary wholesalers is 10.7 t, which is 14 times more than the secondary wholesales' 0.7 t. Second, the unit of trading is also different. The primary wholesalers usually trade by the full container load (FCL) [s4], as their daily trading volume is much more than the secondary wholesalers'. The secondary wholesalers mainly trade in units of *less-than container load* (LCL).[s5] The third point is the difference in the primary and secondary wholesalers' sources of goods; the primary

Table 1 Main characteristics of primary and secondary wholesalers

	Primary Wholesalers	Secondary Wholesalers
Business Scale	10.7 t/d	0.7 t/d
Sales Method	FCL (or Bag)	FCL + Odd-Lot
Sourcing Area	Nationwide	Dongwayao Wholesale Market

Source : This data was taken from interview-based surveys (Oct. 2010).
Note : Business scale data for the primary wholesalers are calculated by the weighted average of 10 businesses; business scale data for the secondary class wholesal are calculated by the weighted average of 12 businesses.

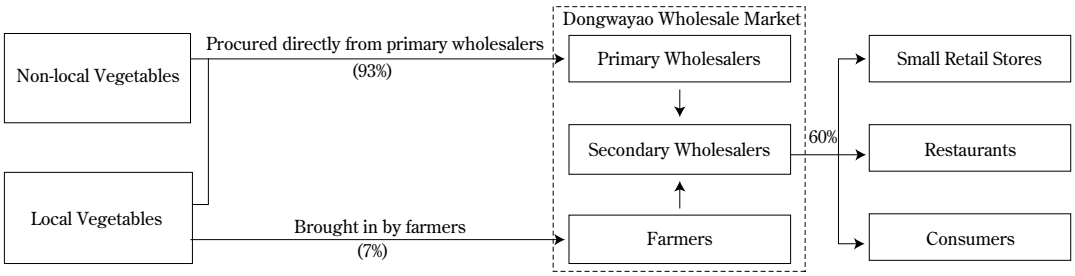

Figure 1 . The secondary-wholesaler-centered source of vegetable circulation

Source : This data was taken from interview-based surveys (Oct. 2010).
Note : (1) Percentages in parentheses indicate the proportion of annual trading volumes to the total turnover at the Dongwayao wholesale market.
(2) 80% of total market turnover is non-local vegetables from primary wholesalers, and 13% of total market turnover is local vegetables from primary wholesalers.

wholesalers purchase their inventory from all over the country, whereas the secondary wholesalers buy their goods from primary wholesalers or farmers at the Dongwayao wholesale market.

Figure 1 shows the secondary-wholesaler-centered vegetable circulation channels at the Dongwayao wholesale market. The *local vegetables* referenced in the figure are vegetables produced in the Hohhot administrative area; *non-local vegetables* refers to vegetables grown outside the Hohhot region. Figure 1, shows that 93% of all vegetables in the Dongwayao wholesale market are procured directly from the primary wholesalers, and the remaining 7% are brought in by the farmers, following which the secondary wholesalers purchase vegetables from the primary wholesalers and the farmers. The annual trading volume by secondary wholesalers accounts for 60% of the total turnover at the Dongwayao wholesale market. Judging from this, the secondary wholesalers play a very important role in the circulation of vegetables on the wholesale market, and their target customers are small retail stores, restaurants, and consumers.

Figure 2 shows the changes in the number of secondary wholesalers and the proportion of their annual trading volumes to the total turnover of the Dongwayao wholesale market. The biggest difference between the fixed and fluid secondary wholesalers shown in this figure is whether there is a fixed business site; the secondary wholesalers that have rented fixed pitches at the Dongwayao wholesale market to carry out their business are called fixed secondary wholesalers. In contrast, because the fluid secondary wholesalers have no fixed pitches, they can only sell their vegetables street-side in any open space they can find, and it is difficult for them to achieve a stable relationship with

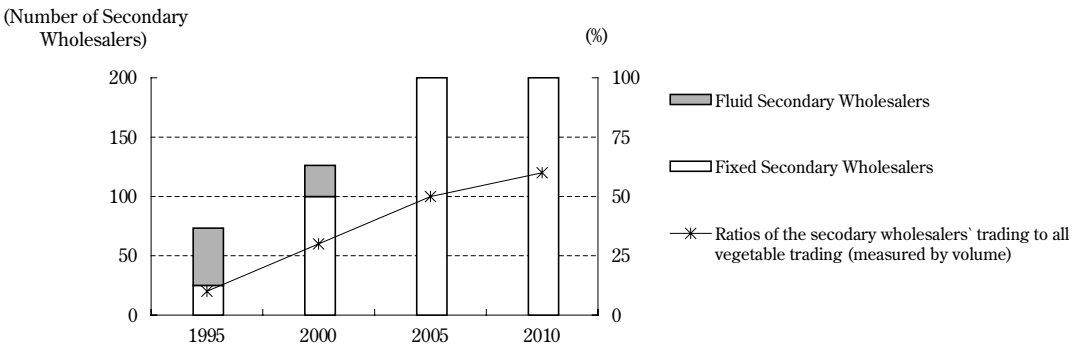

Figure 2 . The number of the secodary wholesalers and trading volumes, 1995-2010

Source: This data was taken from interview-based surveys (Oct. 2010).

their customers. As shown in figure 2, fluid secondary wholesalers increasingly choose to rent fixed pitches as well. As a result, there were no fluid secondary wholesalers by 2005.

Against the background of continuous expansion in the numbers of primary wholesalers[1)] and an increasing number of small buyers such as small retail stores and restaurants (as shown in Figure 5), the total amount of secondary wholesalers increased from about 70 in 1995 to approximately 125 in 2000 and 200 in 2005, as shown in Figure 2. No new vegetable trading stalls have been added since that time, due to the size restrictions of the vegetable trading market, and the number of secondary wholesalers remained at about 200 from 2005 to 2010. The total turnover of these secondary wholesalers rose from 10% in 1995 to 30% in 2000, then to 50% in 2005 and again to 60% in 2010 (the annual sales of the secondary wholesalers is divided by the annual trading volume of the Dongwayao wholesale market, and then the quotient is multiplied by 100 to get a percentage rate). This shows a trend of significant expansion in the turnover of secondary wholesalers at the Dongwayao wholesale market.

3. Analysis on the sales activities of secondary wholesalers

3.1 Profiles of the research subjects

Table 2 shows the profiles of 12 secondary wholesalers (arranged in ascending order of annual vegetable sales). Firstly, only one of the subjects had sold vegetables before 2000; five started to sell vegetables between 2000 and 2005; and six entered this line of business after 2005. This tends to support the data indicated in Figure 2 showing that secondary wholesalers first came onto the scene in the late 1990s and gradually became more numerous thereafter. Secondly, in terms of their operational structure, the secondary wholesalers almost entirely run by a two person, family-based management team. Thirdly, the annual sales of the secondary wholesalers are greatly variable, ranging from 83 tons to 454 tons. This is not only related to the marketing power of each secondary wholesaler, but is also closely connected with the type of vegetable they sell (leafy vegetables or fruits). Generally, secondary wholesalers that mainly deal in heavier vegetables such as potatoes reach higher trading volumes than those mainly selling leafy vegetables such as cilantro. As such, we see no strong correlation between stall area and annual sales. Fourthly, the booth areas of the secondary wholesalers are very small (only 9 − 25 m^2), just a fraction of the booth sizes of primary wholesalers (50 − 120 m^2). Finally, annual booth rental fees paid by the secondary wholesalers range from 8,000 − 35,000 Yuan, depending on size and location.

Figure 3 shows the jobs the wholesalers had

Table 2　Profile of the secondary wholesalers

No.	First Year of Vegetable Sales	Wholesaler		Annual Sales Volume (t)	Stall Area (m^2)	Stall Rent (Yuan per year)
		Number of Staff	Relationship			
1	2002	2	Family	83	9	8,000
2	2008	2	Family	119	12	8,000
3	2002	2	Family	157	18	20,000
4	2002	2	Family	183	18	35,000
5	2005	2	Family	203	12	8,000
6	2000	2	Family	243	15	18,000
7	1995	3	Family	247	23	18,000
8	2002	2	Family	274	12	8,000
9	2010	2	Family	303	12	18,000
10	2005	2	Family	337	25	30,000
11	2007	3	Family	365	12	8,000
12	2007	2	Family	454	12	8,000

Source: This data was taken from interview-based surveys (Oct. 2010).

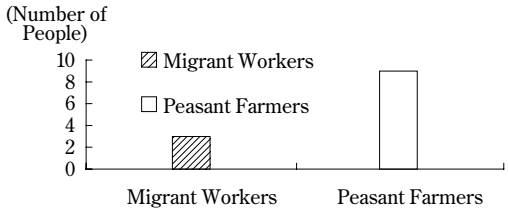

Figure 3 . Previous careers of the secondary wholesalers

Source: This data was taken from interview-based surveys (Oct. 2010).

before they got into vegetable sales. Three were migrant workers, accounting for only 25% of the total number of the secondary wholesalers. These three secondary wholesalers stated that the main reason they changed careers was to gain flexibility in the amount of time they spent working and the intensity at which they worked. Although their former income was more or less the same as what they currently earn from vegetables sales, two of the largest drawbacks of migrant work were the heavy workload and the need to always abide by the directions of the overseers. The remaining 9 secondary wholesalers were farmers before getting into vegetable sales. The main reason they entered the industry was that, due to the rising prices of agricultural production and unstable agricultural product prices coupled with the frequent occurrence of natural disasters such as drought, blight, and insect damage, farmers barely make ends meet. This data allows us to confirm that secondary wholesalers are mainly made up of former migrant workers and farmers.

3.2 Commercial behavior of secondary wholesalers

After purchasing vegetables from primary wholesalers and farmers, secondary wholesalers sell them, mainly to small retail stores, restaurants, and consumers, as shown in Figure 1. Figure 4 shows the respective proportions of vegetables bought by small retail stores, restaurants, and consumers from the secondary wholesalers as a function of the total turnover of secondary wholesalers. As shown in this figure, of their annual sales in 2005, 43%, the largest proportion, were to retail stores, 41% were to consumers, and 16% were to restaurants. In 2010, however, the percentage of sales to small retail stores and restaurants expanded to 49% and 37% respectively, whereas sales to consumers significantly decreased to 14%. This change is mainly due to the growth in the number of small retail stores and restaurants that has accompanied China's rapid economic expansion.

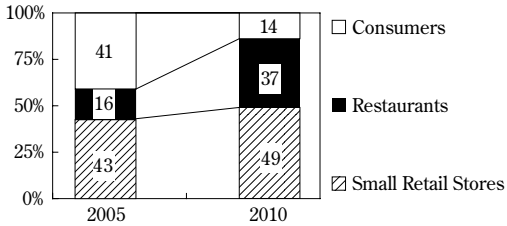

Figure 4 . Proportion and changes in the type of customers among secondary wholesalers

Source: This data was taken from interview-based surveys (Oct. 2010).

Figure 5 shows the extent of the growth in the number of small retail stores[2)] and the restaurants in Hohhot. As shown in this figure, the number of small retail stores and restaurants gradually increased from 0 and 0 respectively in 1990 to 350 and 130 in 2005, in line with the rapid growth of the domestic economy. As the government intensified its crackdowns on unlicensed businesses and consumers became increasingly aware of food safety issues, an increasing number of consumers have begun to buy their food from stores with business licenses and food sanitation licenses. In this context, small retail stores and restaurants rapidly grew numerous. By October 2010, the number of small retail stores and restaurants have respectively increased to more than 1700 and over 750, which has greatly increased the total volume of goods purchased from secondary wholesalers. Thus, the turnover rate of vegetables sold to small retail stores and restaurants has risen from 59% in 2005 to 86% in 2010, and sales to consumers have significantly decreased from 41% to 14%; with the advent of a great number of small retail stores located in residential areas, most consumers prefer the convenience of their small neighborhood retail

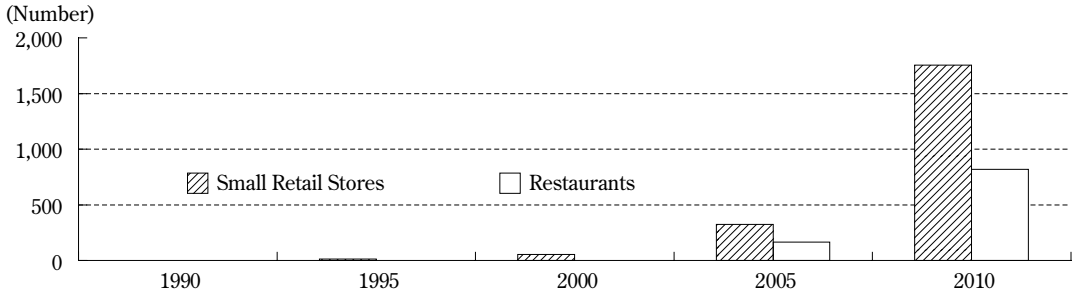

Figure 5　The number of small retail stores and restaurants in Hohhot, 1990-2010
Source: This data was taken from interview-based surveys (Oct. 2010).
Note: Data is limited to the stores registered with the Administration of Industry and Commerce.

stores to the wholesale markets. The data above suggest that the operating models of secondary wholesalers changed from a composite retail/wholesale model, to a purely wholesale one[s7].

Table 3 shows the vegetable sales methods used by the secondary wholesalers; other than the two of them (No. 4 and No. 10) that trade a greater volume on an FCL basis [s8][3], the secondary wholesalers mainly sell on an LCL basis [s9]. This is also the main reason that small retail stores and restaurants purchase goods from them; it is problematic for small retail stores and restaurants that characteristically make small purchases to have dealings with primary wholesalers because they trade only by the FCL [s10][4]. The secondary wholesalers, then, make up for this defect, and trade by the LCL [s11]as well as by the FCL [s12], in order to meet their purchasers' demands for smaller quantities. The 70% weighted average for LCL [s13]sales shown in Table 3 also supports this point of view.

Table 3　Main sales methods used by the secondary wholesalers

(Unit:%)

No.	FCL Sales	LCL Sales
1	0	100
2	10	90
3	20	80
4	60	40
5	10	90
6	50	50
7	20	80
8	30	70
9	10	90
10	60	40
11	0	100
12	50	50
Weighted Average	30	70

Source: This data was taken from interview-based surveys (Oct. 2010).

Thus, the above data allows us to surmise that the secondary wholesalers complement the dispersion function of the primary wholesalers in national wholesale-market-centered circulation. Specifically, the secondary wholesalers play a regulatory role in eliminating the gap between the mass distribution of the primary wholesalers and small-scale purchases by small retail stores and restaurants.

Table 4 shows the sales volume and profit shares of the secondary wholesalers at different blocks of time during the day. First, the business hours of the secondary wholesalers are about 14 hours long, from 4 am to 6 pm[5]. Of this time, the busiest period for most of them is between 5 am and 10 am, or *Time Block I*, with sales that account for 60% - 95% of the whole day's sales., or an average of 78% of daily sales. Notably, sales profit during Time Block I can account for up to 100% of daily profits, with the lowest numbers at 85% and an average of 95%. These figures show Time Block I to be the most important period for the secondary wholesalers to sell goods and earn a profit, and is due to the fact that restaurants and small retail stores tend to make their purchases in the morning of any given business day so as to ensure the overall quality (in terms of appearance and freshness) of the goods. Secondly, the proportion of sales and profits during other business hours, or

Table 4 Sales volume and profit ratio of secondary wholesalers during different time blocks

No.	Time Block I			Time Block II		
	Hours	Ratio of Sales Volume (%)	Ratio of Profit (%)	Hours	Ratio of Sales Volume (%)	Ratio of Profit (%)
1	5am - 9am	60	100	9am - 6pm	40	0
2	6am - 9am	60	90	9am - 6pm	40	10
3	5am - 10am	75	100	10am - 6pm	25	0
4	5am - 10am	80	100	10am - 6pm	20	0
5	4am - 10am	80	100	10am - 6pm	20	-5
6	5am - 11am	80	90	11am - 6pm	20	10
7	5am - 10am	95	100	10am - 6pm	5	0
8	5am - 10am	70	100	10am - 6pm	30	0
9	4am - 11am	60	85	11am - 6pm	40	15
10	4am - 11am	80	90	11am - 6pm	20	10
11	5am - 11am	80	100	11am - 6pm	20	0
12	5am - 12pm	90	100	12am - 6pm	10	0
Mean	5am - 10am	78	95	10am - 6pm	22	5

Source: This data was taken from interview-based surveys (Oct. 2010).
Note: The ratio of sales volume is a weighted average and ratio of profit is an average.

Time Block II, is very low. In our study, only four secondary wholesalers (No.2, No.6, No.9, and No. 10) earn any manner of profit, during this time, and the remaining eight either earn no profit or take a loss, as they end up selling their goods at or below cost in order to reduce inventory, improve cash flow, and avoid suffering greater losses due to the reduced freshness and eventual decay of their wares.

Table 5 shows the purchase volumes by consumers, small retail stores, and restaurants that the secondary wholesalers do business with within Time Block II. Here, we see that consumers and restaurants make purchases during this time block, but not the small retail stores. This is because an increasing number of consumers are focusing on freshness over price as their standard of living increases. As a result, the small retail stores purchase fresh vegetables early (during Time Block I) at the wholesale market in order to ensure commercial quality, and since many of the vegetables being sold in Time Block II are left over from Time Block I, their freshness is compromised, and they are not of a quality to meet the needs of the small retail stores.

Table 5 Proportion of daily sales by the secondary wholesalers during time block II, by type of customer

(Unit : %)

No.	Percent of Daily Sales During Time Block II			
	All Sales	Consumers	Restaurants	Small Retail Stores
1	40	40	0	0
2	40	20	20	0
3	25	25	0	0
4	20	18	2	0
5	20	18	2	0
6	20	12	8	0
7	5	0	5	0
8	30	30	0	0
9	40	32	8	0
10	20	0	20	0
11	20	20	0	0
Weighted Average	22 (100)	16 (73)	6 (27)	0

Source: This data was taken from interview-based surveys (Oct. 2010).
Note: Numbers in parentheses indicate percent of sales within time block II.

However, the secondary wholesalers need to clear out their perishable goods quickly or face an even greater loss from reduced freshness and eventual decay. Thus, the secondary wholesalers sell at or below cost in order to cut their losses. These fire-sale prices meet the needs of middle to low income families and restaurants that serve mostly lower-income customers such as students[6].

4. Conclusions

Based on an analysis of the sales activities of secondary wholesalers, this paper has identified the role secondary wholesalers are playing in the large-scale, nationwide circulation of vegetables. The specifics of this analysis are as follows.

Firstly, we took as our subject a sampling of secondary wholesalers at the Dongwayao wholesale market, which is located in Hohhot, the capital of the Inner Mongolia in China. One of the first 24 wholesale markets to be certified by the Ministry of Agriculture, the Dongwayao wholesale market plays an important role in the chain of consumption, with a vegetable trading volume accounting for 70% of vegetable trading in Hohhot. The annual trading volume of secondary wholesalers accounts for 60% of the total turnover at the Dongwayao wholesale market, and shows a clear trend toward expansion.

Secondly, we analyzed the development of the secondary wholesalers and reason behind the change in operating models from a composite retail/wholesale model to a pure wholesale one [s14]. On one hand, the rapid increase in the number of small retail stores and restaurants expanded purchasing from the secondary wholesalers, and on the other hand, these stores and restaurants began to compete with the secondary wholesalers for

customers [s15]. As a result, the rate of sales to small retail stores and restaurants expanded rapidly to 86%, whereas sales to consumers shrunk to 14%.

Finally, we analyzed the main reason that secondary wholesalers sell in units of LCL [s16]. Secondary wholesalers sell vegetables purchased from primary wholesalers to small retail stores, restaurants, and consumers; they trade in these smaller units in order to meet the needs of the small-scale purchasers. In contrast, the primary wholesalers only trade by the FCL [s17].

In conclusion, secondary wholesalers complement the dispersion function of primary wholesalers in the large-scale and broader-area circulation of vegetables. Specifically, secondary wholesalers play an important role in moderating the gap between mass distribution and small-scale purchasing. Moreover, this effect has continued to become more and more obvious, implying that more stages could actually be more efficient in the process of vegetable circulation than expected by most Chinese scholars, who tend to posit that fewer stages are better—an assertion contradicted by an analysis of this study. Of course, this paper focuses on the sales activities of secondary wholesalers and the influences of these sales activities on small-scale purchasers only in terms of trade volume; however, the positive effect that the sales activities of secondary wholesalers have on primary wholesalers could prove an interesting theme for future study.

Notes

1）See reference [6].

2）The data on small retail stores is limited to those that sell vegetables.

3）There are two main reasons for small retail stores and restaurants to purchase by the FTC [s19] from the secondary wholesalers. Firstly, although the sales price asked by asking price of primary wholesalers and farmers is around 5% lower than that demanded by the secondary wholesalers, goods cannot be unpacked for inspection. Thus, in buying from them, stores and restaurants may occasionally encounter decay or size disparities among the sourcing merchandise, resulting in a loss of profit. On the other hand, though buying from secondary wholesalers comes with about a 5% higher asking price, the customer is able to inspect the unpacked goods and select those tthat are less likely to result in a loss. Secondly, it is sometimes not possible to purchase from primary wholesalers or farmers because their goods have sold out.

4）If small retail stores and restaurants purchase perishable vegetables such as cilantro in quantities too large for them to use or sell, they end up having to sell at or below cost or throw away anything they cannot use.

5）The business hours of secondary wholesalers change from season to season.

6）Zhao's research results show that middle- and low-income consumer groups prioritize (low) price than over quality.

References

[1] AN Yufa "The Characteristics and Functions of Vegetable Middlemen in China-A Case Study of Shouguang Area in Shandong Province," Proceedings of Annual Conference of The Agricultural Economics Society of Japan 1998, pp.320-325.

[2] OSHIMA ICHIJI "the role of middlemen in the circulation of agricultural products in China - fritterers and fruit shops in the process of apple circulation in Shaanxi LiQuan" Rural study, Vol.94, 2002, pp.61-70.

[3] SONG Xiaokai "The Scale Expansion and Functional Changes of Merchants in the Distribution of Farm Products in China: A Case Study of an Apple Production Center in Shandong Province," Journal of Rural Economics, Vol.18, 2009, pp.47-51.

[4] WANG Zhigang "Restructuring of China Fruit and vegetables wholesale market," Kyushu University Press, 2001.

[5] ZHAO Liming "Vegetable Procurement Activities of Retailers in the Inland of China: A Case Study of Hohhot city," Journal of Rural Economics, Vol.20, 2011, pp.1-10.

[6] ZHAO Liming "The Influence of the Vegetable Wholesaler's Scale Expansion to the Commodity Procurement Action," Journal of Rural Economics, Vol.22, 2013, pp.11-20.

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