

# Changing Economic Performance of Japan's Agricultural Cooperatives

Dr. Yoshihisa Godo\*  
Meiji Gakuin University, Japan  
E-mail: godo@eco.meijigakuin.ac.jp

## ABSTRACT

*Japan has a unique system of agricultural cooperatives, known as JA. This study presents the updated estimates of JA's share in the agricultural input and output markets. This study also calculates indicators for the economic solidarity of JA's network. The estimation results show that, while JA has enjoyed strong market power as a unified economic group for years, it had a turning point in the middle of the 1990s: JA's market share and solidarity have been gradually declining since then.*

Keywords: JA, market share, solidarity, rice

## INTRODUCTION

The system of agricultural cooperatives known as JA plays a pivotal role in Japan's agricultural sector<sup>1</sup>. Although nobody is legally required to join JA, all Japanese farmers belong to the organization.

In spite of its importance, objective information on JA's economic position is limited. This is mainly because of the complexity of its business statistics. To fill this information gap, the author estimated and published JA's market share data for agricultural inputs and outputs (Godo, 2015). This study presents an updated version of the author's dataset based on the most recent statistics.

## JAPAN'S SYSTEM OF AGRICULTURAL COOPERATIVES

JA has a three-tier structure<sup>2</sup>. Unit cooperatives in villages, towns, and cities constitute the first level, and are in direct contact with farmers. The Prefectural Central Unions of Agricultural Cooperatives (PCUs) in the prefectures constitute the second level. Each prefecture has its own PCU, to which all the unit cooperatives in the prefecture belong. *Zenchu* constitutes the third and top level. Based on this nationwide network, *Zenchu* organizes farmers' political movements. It also supervises the business performance and profitability of unit cooperatives in collaboration with PCUs.

JA provides not only agricultural services but also almost every other service required for

---

\* Professor of Economics in Meiji Gakuin University, 1-2-37 Shirokane-dai, Minato-ku, Tokyo 108-8636, Japan. Tel.: (81 3) 5421 5628; fax: (81 3) 5421 5207; e-mail: godo@eco.meijigakuin.ac.jp

<sup>1</sup> The acronym JA comes from the combination of "Japan" and "Agriculture." The name JA has been used since 1993. Before that, Japanese agricultural cooperatives called themselves *Keito* (its literal meaning is system). For simplicity, this study uses JA for the entire postwar period.

<sup>2</sup> See Godo (2014a) for an overview of the JA system.

daily life. In addition to farmers, non-farmers who are admitted as associated members and have paid their dues are allowed to use all the services of the cooperatives under the same conditions as farmers<sup>3</sup>.

Each unit cooperative has its own jurisdiction, which not overlap with other jurisdictions. As of April 1, 2015, there were 706 unit cooperatives in Japan. The size and human resources available to any one agricultural cooperative are insufficient to enable it to compete with private businesses, such as supermarkets and trading companies. To overcome this weakness, unit cooperatives form federations at the prefectural and national levels, referred to as *Keizairen* and *Zen-noh*, respectively. They buy and sell agricultural and non-agricultural commodities as unit cooperatives' agents.

## ESTIMATION METHODOLOGIES FOR JA'S MARKET SHARES

Godo (2015) provides JA's market share estimates for fiscal years 1960–2011. The author mainly relied on two statistical publications of the Ministry of Agriculture, Forestry and Fisheries (MAFF): *Sogo Nokyo Tokei Hyo* (Statistics of Agricultural Cooperatives) and *Nogyo Shokuryo Kanrensangyo no Keizaikeisan* (Social Accounts for the Agricultural and Food Industries). After the publication of Godo (2015), MAFF released new versions of these statistics. These publications allowed the author to estimate 2012 data using the same methodologies as Godo (2015). This study provides the author's JA market share estimates for fiscal years 1960–2012<sup>4</sup>.

## ESTIMATES OF JA'S SHARE IN THE AGRICULTURAL INPUT MARKET

Expenditures on farming inputs are of two types: expenditures for tangible inputs such as fertilizers and pesticides and those for intangible inputs such as fees for contract farming and joint-use facilities.

Traditionally, JA's focus was to provide tangible inputs for farmers. Recently, however, JA has been becoming increasingly active in providing intangible inputs for farmers. To estimate JA's share in the agricultural input market, therefore, this study calculates the following two ratios.

Ratio I-A = (Unit cooperatives' total sales of tangible farming inputs + unit cooperatives' total charges for intangible farming inputs)/farmers' total expenditure for farming inputs

Ratio I-B = Unit cooperatives' total sales of tangible farming inputs/farmers' total expenditure for farming inputs

Of the unit cooperatives' total supply of tangible inputs, the proportion that farmers procure through *Keizairen* or *Zen-noh* is defined as "percentage utilization of cooperative channels." Those associated with JA recognize this ratio as an indicator of the JA group's solidarity: the larger the ratio, the stronger the group's business solidarity.

Table 1 and Figures 1 and 2 show ratios I-A and I-B and percentage utilization of cooperative channels estimated in this study.

---

<sup>3</sup> The significance of non-farmers in JA is discussed in Godo (2014b).

<sup>4</sup> This paper's estimates for 1960–2011 are the same as those in Godo (2015).

## ESTIMATES OF JA'S SHARE IN THE AGRICULTURAL OUTPUT MARKET

Agricultural production refers to not only the output sold but also the unsold output (i.e., that retained for farmers' self-consumption).

This study calculates the following two ratios as indicators of JA's shares in the agricultural output market.

Ratio O-A = Total value of unit cooperatives' joint shipment of agricultural products/Total value of agricultural products

Ratio O-B = Total value of unit cooperatives' joint shipment of agricultural products/Total value of agricultural products sold

Of the unit cooperatives' joint shipment, the proportion marketed through *Keizairen* or *Zen-noh* is defined as "percentage utilization of cooperative channels." As with farming inputs, this ratio is recognized as an indicator of the JA group's solidarity: the larger the ratio, the stronger the group's business solidarity.

Table 2 and Figures 3 and 4 show ratios O-A and O-B and percentage utilization of cooperative channels estimated in this study.

Rice is the staple food for Japanese consumers, and its distribution was specially controlled by the MAFF previously. Under the Food Control Law (FCL), which remained in force until 1995, agricultural cooperatives were given the privilege of marketing rice at a stable margin guaranteed by the MAFF<sup>5</sup>.

MAFF provides sufficient information to calculate ratio O-A and percentage utilization of cooperative channels separately for rice and other agricultural products. Table 3 and Figures 5 and 6 show the results. In addition, Figure 7 shows the share of rice in Japan's total agricultural production and in JA's total distribution of agricultural products based on the data in Table 3<sup>6</sup>.

Table 3 and Figures 5, 6, and 7 imply that JA had an advantage in distributing rice under the FCL. JA showed especially strong solidarity and enjoyed a large market share for rice until 1995. However, this advantage has disappeared in recent years, with no significant difference at present between rice and other commodities in terms of ratio O-A or percentage utilization of cooperative channels.

## CONCLUSION

This study's estimates imply that JA enjoys strong market power as a unified economic group. JA's share in the agricultural input market is now as high as almost 30 percent. Unit cooperatives rely heavily on *Keizairen* and *Zen-noh* (nearly 70 percent) to obtain new stock of agricultural materials. JA's share in the agricultural output market (considering all

---

<sup>5</sup> Godo (2013) provides a compact review of the history of Japan's rice policy in the postwar period.

<sup>6</sup> Figure 7 displays the share of rice in JA's total distribution of agricultural products, obtained by dividing column (2) of Table 3 by column (3) of Table 2. Likewise, dividing column (1) of Table 3 by column (1) of Table 2 gives the percentage of rice in the total value of agricultural products.

agricultural products jointly) is currently nearly 50 percent, and nearly 80 percent of unit cooperatives' joint shipments are routed through *Keizairen* or *Zen-noh*. In particular, JA had an advantage in distributing rice under the FCL. JA showed especially strong solidarity and enjoyed a large market share for rice until 1995.

However, this study's estimates also show that JA's market share and solidarity have been gradually declining since the mid-1990s. Simultaneously, JA's advantage in rice distribution has been disappearing. Japanese markets have witnessed various revolutionary changes over this period, with market competition becoming fiercer for many types of commodities. This study's analysis has indicated that agricultural input and output markets are no exception to this general trend.

Table 1 JA's market share for farming inputs							
Fiscal year <sup>a</sup>	Total farming inputs <sup>b</sup> (billions of yen)			JA's share in the value of farming inputs (%)		Co-op. channel utilization <sup>c</sup> (%)	
	Inputs from Nokyo (billions of yen)			Ratio I-A	Ratio I-B		
	Sales of tangible inputs <sup>c</sup>	Charges for contract farming and joint use of facilities <sup>d</sup>					
	(1)	(2)	(3)	(4)=(2)+(3)/(1)	(5)=(2)/(1)		(6)
1960	808	213	9	27.5	26.4	74.2	
1961	956	266	10	28.9	27.8	74.9	
1962	1,078	304	10	29.1	28.2	74.2	
1963	1,149	350	11	31.4	30.5	75.4	
1964	1,303	372	12	29.5	28.6	77.4	
1965	1,490	434	15	30.1	29.1	77.5	
1966	1,649	527	17	33.0	31.9	77.9	
1967	1,813	594	22	34.0	32.8	78.9	
1968	2,017	663	28	34.2	32.9	80.1	
1969	2,299	726	34	33.0	31.6	80.2	
1970	2,477	812	38	34.3	32.8	81.1	
1971	2,559	873	36	35.5	34.1	81.2	
1972	2,786	943	37	35.2	33.9	80.5	
1973	3,631	1,260	42	35.9	34.7	79.6	
1974	4,730	1,695	54	37.0	35.8	80.3	
1975	5,344	1,796	70	34.9	33.6	80.1	
1976	6,062	1,973	83	33.9	32.6	79.8	
1977	6,554	2,133	96	34.0	32.5	79.4	
1978	6,514	2,094	111	33.9	32.1	78.9	
1979	7,086	2,243	132	33.5	31.7	78.7	
1980	7,458	2,450	146	34.8	32.9	79.8	
1981	7,602	2,502	158	35.0	32.9	80.1	
1982	7,420	2,449	166	35.2	33.0	79.8	
1983	7,567	2,494	167	35.2	33.0	80.0	
1984	7,897	2,559	166	34.5	32.4	79.7	
1985	7,791	2,511	182	34.6	32.2	79.8	
1986	7,548	2,373	196	34.0	31.4	78.7	
1987	7,032	2,233	199	34.6	31.8	78.5	
1988	7,002	2,288	209	35.7	32.7	77.4	
1989	7,037	2,171	213	33.9	30.9	77.5	
1990	7,195	2,252	221	34.4	31.3	76.9	
1991	7,311	2,289	229	34.4	31.3	76.3	
1992	7,195	2,277	242	35.0	31.7	75.7	
1993	6,952	2,218	235	35.3	31.9	75.7	
1994	7,010	2,180	252	34.7	31.1	73.8	
1995	7,050	2,117	266	33.8	30.0	73.5	
1996	7,041	2,257	271	35.9	32.1	71.3	
1997	7,004	2,051	270	33.1	29.3	71.3	
1998	6,718	1,968	263	33.2	29.3	70.5	
1999	6,695	1,892	262	32.2	28.3	69.2	
2000	6,595	1,833	255	31.7	27.8	68.5	
2001	6,428	1,782	266	31.9	27.7	67.1	
2002	6,560	1,711	267	30.1	26.1	67.4	
2003	6,294	1,675	267	30.9	26.6	67.0	
2004	6,207	1,668	271	31.2	26.9	65.5	
2005	6,208	1,625	289	30.8	26.2	65.1	
2006	6,115	1,579	279	30.4	25.8	64.6	
2007	6,115	1,613	274	30.9	26.4	64.5	
2008	6,379	1,718	283	31.4	26.9	64.6	
2009	6,311	1,626	277	30.2	25.8	67.1	
2010	6,128	1,549	269	29.7	25.3	66.2	
2011	6,098	1,548	270	29.8	25.4	65.9	
2012	6,417	1,576	270	28.8	24.6	65.8	

Notes a. The Japanese fiscal year starts on April 1 and ends on March 31 of the next calendar year.

b. Sum of expenditures on nondurable agricultural inputs, agricultural machinery, and agricultural buildings (data from Ministry of Agriculture, Forestry and Fisheries, *Nogyo Shokuryo Kanrensangyo no Keizaikaisan*).

c. Sum of fertilizer, agricultural chemical, feed, and agricultural machinery sales plus "other" in production materials (data from Ministry of Agriculture, Forestry and Fisheries, *Sogo Nokyo Tokei Hyo*).

d. Sum of warehousing and utilization business earnings (data from Ministry of Agriculture, Forestry and Fisheries, *Sogo Nokyo Tokei Hyo*).

e. Ratio of co-op channel purchases to total procurement of farming materials in terms of value (data from Ministry of Agriculture, Forestry, and Fisheries, *Sogo Nokyo Tokei Hyo*).

Table 2 JA's share in agricultural product distribution							
Fiscal year <sup>a</sup>	Total production <sup>b</sup>	Total sales <sup>c</sup>		Agricultural cooperatives' share in agricultural product distribution (%)		Co-op. channel utilization <sup>e</sup> (%)	
	(billions of yen)	(billions of yen)	Sales through JA <sup>d</sup> (billions of yen)	Ratio O-A	Ratio O-B		
	(1)	(2)	(3)	(4)=(3)/(1)	(5)=(3)/(2)	(6)	
1960	2,117	1,404	560	26.4	39.9	90.1	
1961	2,353	1,576	706	30.0	44.8	90.0	
1962	2,685	1,934	845	31.5	43.7	90.3	
1963	2,827	2,067	918	32.5	44.4	89.4	
1964	3,140	2,329	1,025	32.6	44.0	91.3	
1965	3,492	2,626	1,242	35.6	47.3	91.1	
1966	3,870	2,974	1,490	38.5	50.1	91.6	
1967	4,484	3,521	1,903	42.5	54.1	91.3	
1968	4,705	3,683	2,090	44.4	56.7	91.2	
1969	4,993	3,971	2,131	42.7	53.7	91.3	
1970	5,012	4,020	2,109	42.1	52.5	90.3	
1971	4,991	4,018	2,042	40.9	50.8	89.2	
1972	5,596	4,529	2,391	42.7	52.8	89.3	
1973	6,765	5,461	3,018	44.6	55.3	90.0	
1974	8,451	6,996	3,772	44.6	53.9	91.1	
1975	9,816	8,258	4,517	46.0	54.7	91.3	
1976	10,203	8,475	4,879	47.8	57.6	91.8	
1977	11,078	9,272	5,317	48.0	57.3	91.7	
1978	11,380	9,550	5,528	48.6	57.9	91.6	
1979	11,716	9,823	5,759	49.2	58.6	91.6	
1980	11,574	9,641	5,501	47.5	57.1	91.8	
1981	11,955	9,987	5,605	46.9	56.1	92.0	
1982	11,952	10,062	5,814	48.6	57.8	92.0	
1983	12,242	10,369	6,069	49.6	58.5	92.4	
1984	12,979	11,083	6,524	50.3	58.9	92.9	
1985	13,003	11,157	6,696	51.5	60.0	93.1	
1986	12,704	10,763	6,573	51.7	61.1	93.3	
1987	11,951	10,053	6,204	51.9	61.7	93.0	
1988	11,889	10,167	6,126	51.5	60.3	93.1	
1989	12,520	10,673	6,221	49.7	58.3	92.7	
1990	12,968	11,175	6,411	49.4	57.4	92.8	
1991	12,769	11,109	6,349	49.7	57.2	92.7	
1992	12,377	10,867	6,212	50.2	57.2	93.3	
1993	11,573	10,122	5,934	51.3	58.6	92.9	
1994	12,378	11,016	6,012	48.6	54.6	93.4	
1995	11,570	10,237	5,905	51.0	57.7	92.7	
1996	11,198	10,012	5,916	52.8	59.1	91.2	
1997	10,796	9,655	5,708	52.9	59.1	90.6	
1998	10,798	9,691	5,430	50.3	56.0	90.4	
1999	10,199	9,162	5,150	50.5	56.2	90.1	
2000	9,948	8,911	4,951	49.8	55.6	89.1	
2001	9,574	8,632	4,711	49.2	54.6	87.2	
2002	9,685	8,792	4,735	48.9	53.9	88.9	
2003	9,664	8,638	4,692	48.5	54.3	87.1	
2004	9,581	8,607	4,603	48.0	53.5	86.6	
2005	9,271	8,302	4,515	48.7	54.4	85.9	
2006	9,145	8,167	4,502	49.2	55.1	84.6	
2007	9,089	8,131	4,348	47.8	53.5	82.1	
2008	9,229	8,318	4,379	47.4	52.6	80.6	
2009	8,965	8,125	4,231	47.2	52.1	82.6	
2010	8,837	8,054	4,226	47.8	52.5	81.7	
2011	8,914	8,061	4,226	47.4	52.4	82.0	
2012	9,162	8,389	4,331	47.3	51.6	80.0	

Notes a. The Japanese fiscal year starts on April 1 and ends on March 31 of the next calendar year.

b. Total value of agricultural products (data from Ministry of Agriculture, Forestry and Fisheries, *Nogyo Shokuryo Kanrensangyo no Keizaikeisan* )

c. Total value of agricultural products excluding farmers' self-consumption (data from Ministry of Agriculture, Forestry and Fisheries, *Nogyo Shokuryo Kanrensangyo no Keizaikeisan* ).

d. Total amount marketed and handled by agricultural cooperatives (data from Ministry of Agriculture, Forestry and Fisheries, *Sogo Nogyo Tokei Hyo* ).

e. Ratio of co-op channel sales to total amount marketed and handled (data from Ministry of Agriculture, Forestry and Fisheries, *Sogo Nogyo Tokei Hyo* ).

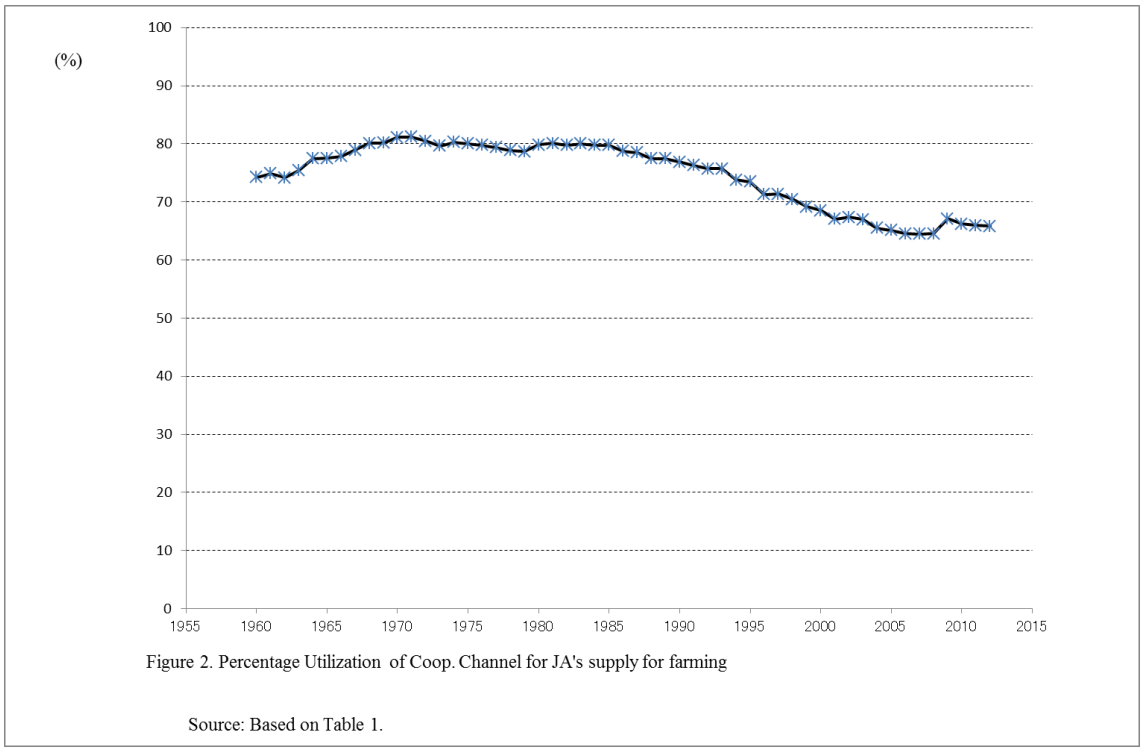
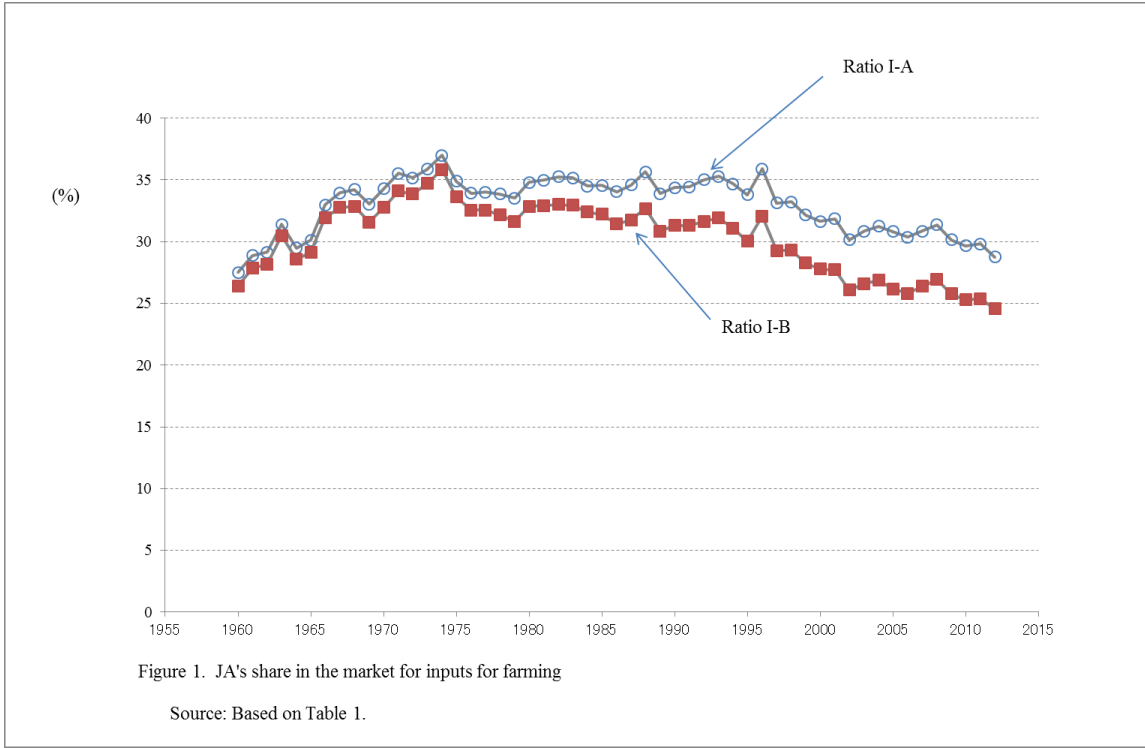
Table 3 JA's share in the distribution of rice and other agricultural products								
Fiscal year <sup>a</sup>	Rice				Agricultural products other than rice			
	Total production <sup>b</sup>	Distribution through agricultural cooperatives <sup>c</sup>	JA's share in distribution	Co-op channel utilization <sup>d</sup>	Total production <sup>b</sup>	Distribution through agricultural cooperatives <sup>c</sup>	JA's share in distribution	Co-op channel utilization <sup>d</sup>
	(billions of yen)		(%)	(%)	(billions of yen)		(%)	(%)
	(1)	(2)	(3)=(2)/(1)	(4)	(5)	(6)	(7)=(6)/(5)	(8)
1960	985	366	37.2	99.1	1,132	194	17.1	73.2
1961	999	412	41.2	99.5	1,354	295	21.8	76.7
1962	1,146	500	43.6	99.3	1,540	346	22.5	77.4
1963	1,216	555	45.7	98.8	1,612	363	22.5	75.1
1964	1,354	614	45.4	99.3	1,786	411	23.0	79.4
1965	1,452	735	50.6	99.1	2,040	508	24.9	79.6
1966	1,620	883	54.5	99.1	2,250	608	27.0	80.7
1967	1,998	1,190	59.6	100.0	2,486	713	28.7	76.8
1968	2,105	1,296	61.6	99.3	2,600	794	30.5	77.8
1969	2,060	1,233	59.8	99.6	2,933	899	30.6	79.9
1970	1,844	1,081	58.6	99.6	3,168	1,028	32.4	80.5
1971	1,646	902	54.8	99.7	3,345	1,140	34.1	81.0
1972	1,895	1,071	56.5	99.6	3,700	1,320	35.7	80.9
1973	2,235	1,324	59.2	99.8	4,530	1,694	37.4	82.3
1974	2,958	1,787	60.4	99.9	5,494	1,985	36.1	83.2
1975	3,608	2,184	60.5	99.9	6,208	2,333	37.6	83.3
1976	3,527	2,285	64.8	99.9	6,676	2,594	38.8	84.6
1977	4,081	2,518	61.7	99.9	6,998	2,799	40.0	84.4
1978	3,996	2,424	60.7	99.9	7,384	3,104	42.0	85.1
1979	3,780	2,392	63.3	99.9	7,936	3,367	42.4	85.8
1980	3,272	1,977	60.4	99.8	8,302	3,524	42.5	87.3
1981	3,507	1,959	55.8	99.8	8,448	3,646	43.2	87.8
1982	3,470	2,060	59.4	99.8	8,482	3,754	44.3	87.7
1983	3,540	2,155	60.9	99.8	8,702	3,914	45.0	88.3
1984	4,101	2,526	61.6	99.9	8,878	3,998	45.0	88.6
1985	3,980	2,589	65.1	99.8	9,024	4,107	45.5	88.8
1986	3,883	2,577	66.4	99.9	8,822	3,997	45.3	89.1
1987	3,402	2,196	64.6	99.8	8,550	4,007	46.9	89.2
1988	3,139	1,981	63.1	99.7	8,749	4,145	47.4	89.9
1989	3,349	1,965	58.7	99.9	9,171	4,256	46.4	89.3
1990	3,312	2,003	60.5	99.8	9,657	4,409	45.7	89.6
1991	3,018	1,889	62.6	100.0	9,751	4,460	45.7	89.7
1992	3,508	2,013	57.4	99.7	8,869	4,199	47.4	90.2
1993	2,937	1,761	59.9	99.4	8,636	4,173	48.3	90.2
1994	3,954	2,000	50.6	99.7	8,424	4,011	47.6	90.3
1995	3,312	1,969	59.5	98.8	8,259	3,935	47.7	89.6
1996	3,172	1,790	56.5	98.2	8,026	4,125	51.4	88.2
1997	2,889	1,644	56.9	97.7	7,907	4,063	51.4	87.7
1998	2,614	1,379	52.8	96.3	8,184	4,051	49.5	88.4
1999	2,473	1,281	51.8	96.3	7,726	3,869	50.1	88.1
2000	2,418	1,207	49.9	94.9	7,531	3,744	49.7	87.2
2001	2,316	1,172	50.6	93.7	7,258	3,539	48.8	85.0
2002	2,257	1,137	50.4	94.9	7,429	3,598	48.4	87.0
2003	2,418	1,172	48.5	93.6	7,245	3,519	48.6	84.9
2004	2,071	1,024	49.5	91.3	7,511	3,579	47.6	85.3
2005	2,029	1,027	50.6	89.4	7,242	3,488	48.2	84.9
2006	1,887	1,022	54.2	86.8	7,258	3,480	47.9	84.0
2007	1,862	945	50.8	83.9	7,228	3,403	47.1	81.6
2008	1,977	978	49.5	81.2	7,252	3,401	46.9	80.5
2009	1,867	933	50.0	80.1	7,098	3,298	46.5	83.3
2010	1,618	841	52.0	78.7	7,219	3,385	46.9	82.5
2011	1,929	905	46.9	77.4	6,985	3,321	47.5	83.3
2012	2,111	989	46.8	72.3	7,051	3,342	47.4	82.3

Notes a. The Japanese fiscal year starts on April 1 and ends on March 31 of the next calendar year.

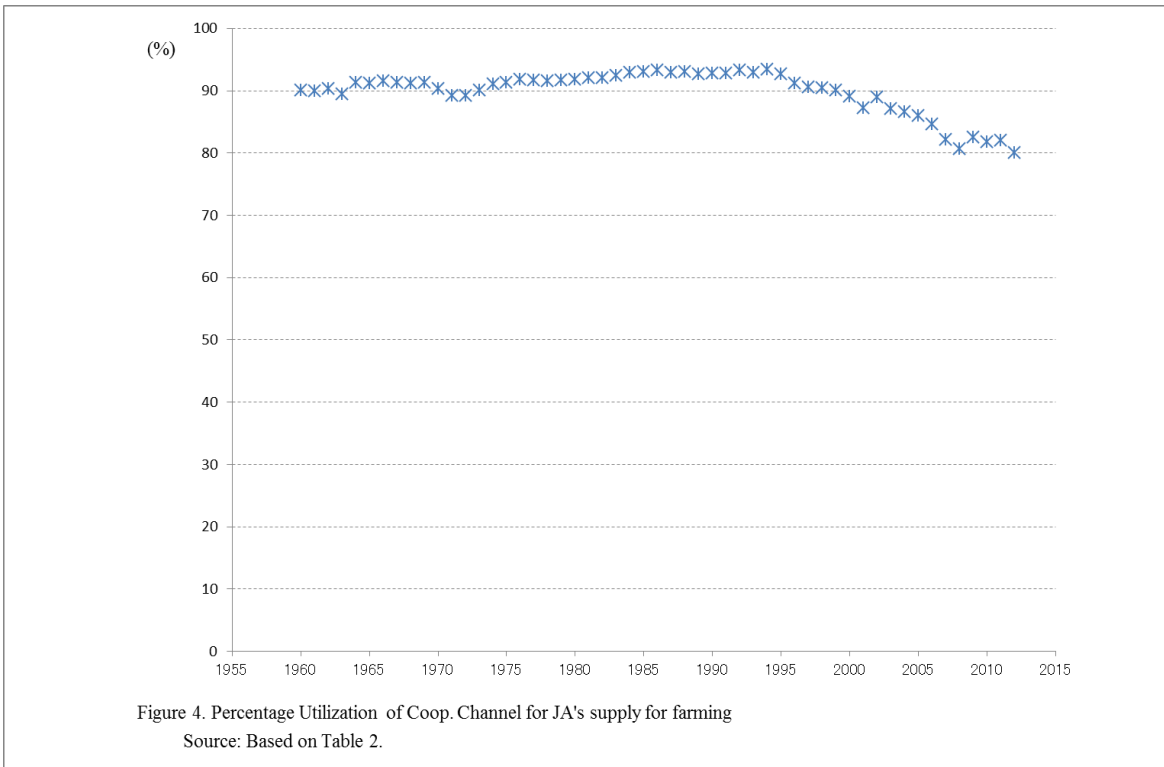
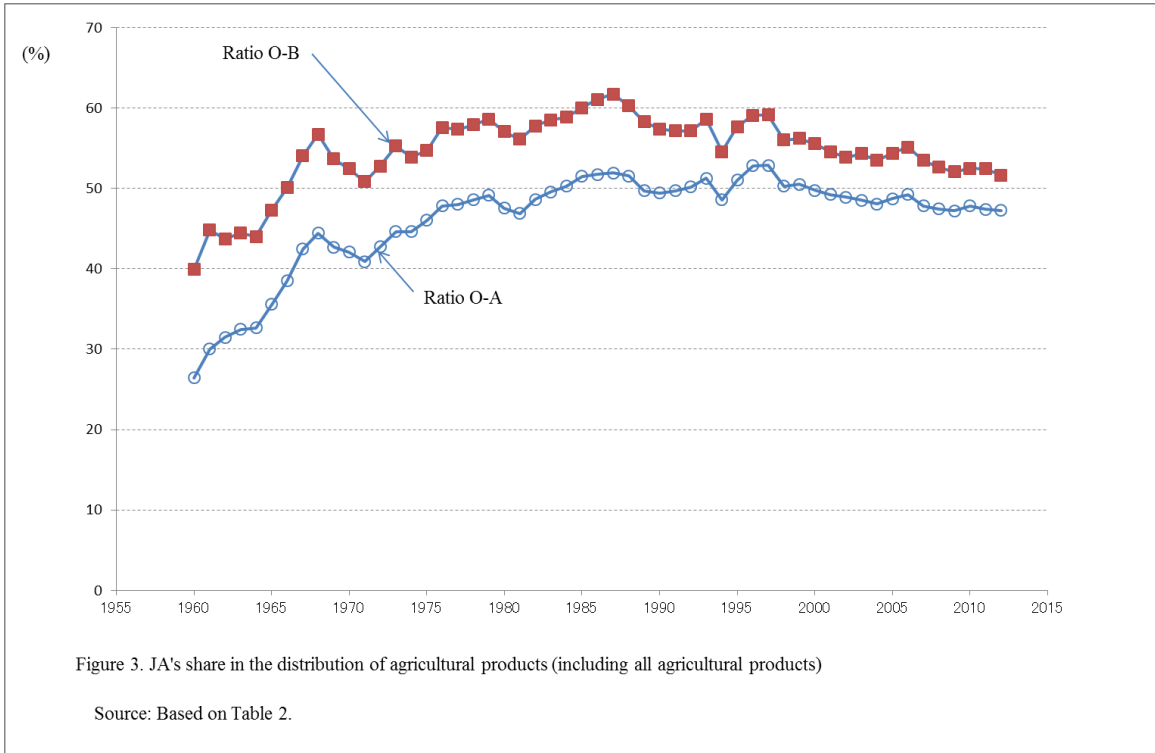
b. Total value of agricultural products (data from Ministry of Agriculture, Forestry and Fisheries, *Nogyo Shokuryo Kanrensangyo no Keizaikeisan*).

c. Total value of products marketed and handled through agricultural cooperatives (data from Ministry of Agriculture, Forestry and Fisheries, *Sogo Nokyo Tokei Hyo*).

d. Ratio of co-op channel sales to total amount marketed and handled (data from Ministry of Agriculture Forestry and Fisheries, *Sogo Nokyo Tokei Hyo*).







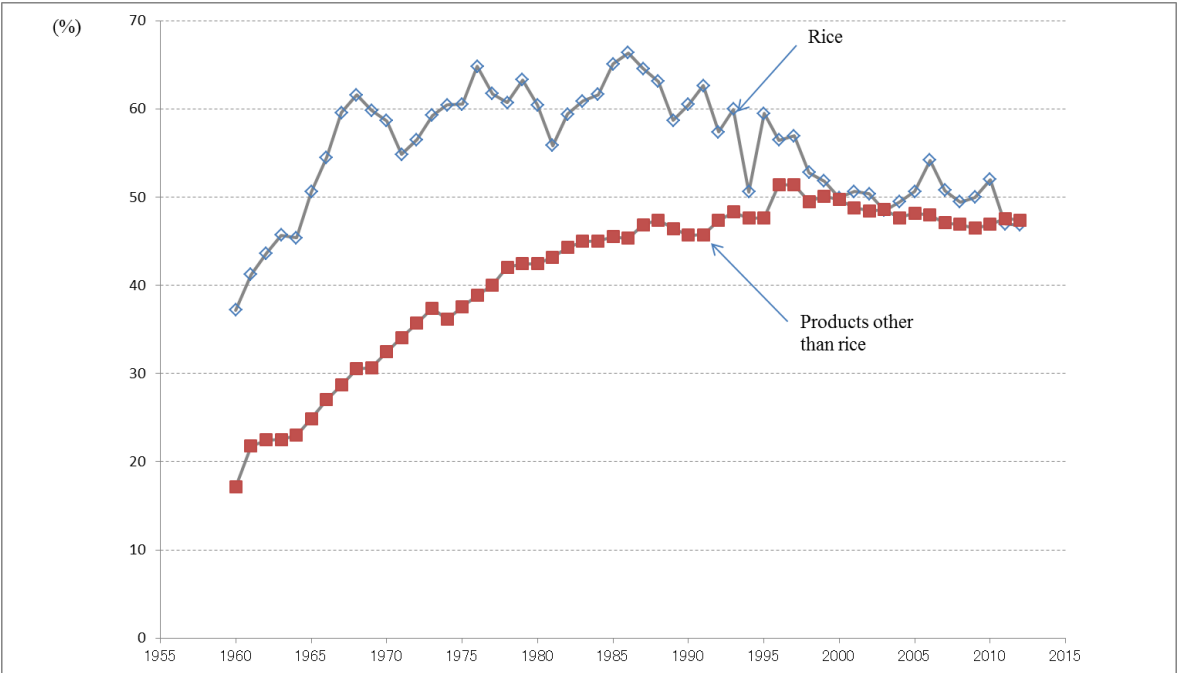


Figure 5 JA's share in the distribution of rice and other agricultural products  
 Source: Based on Table 3.

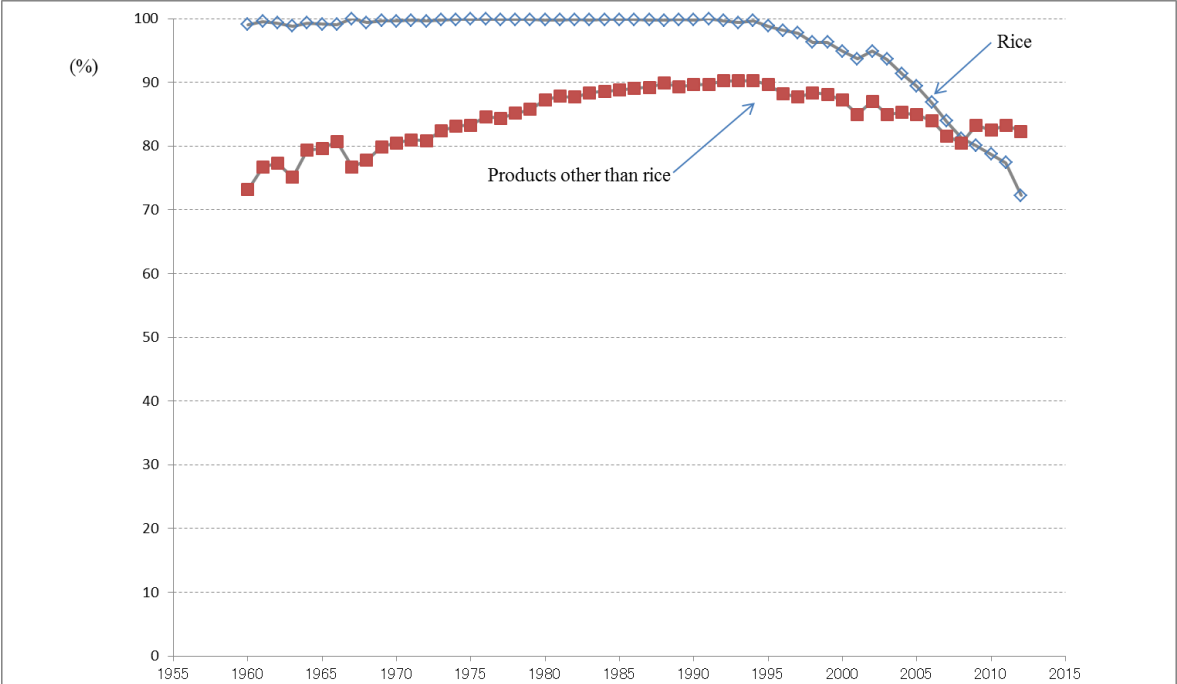
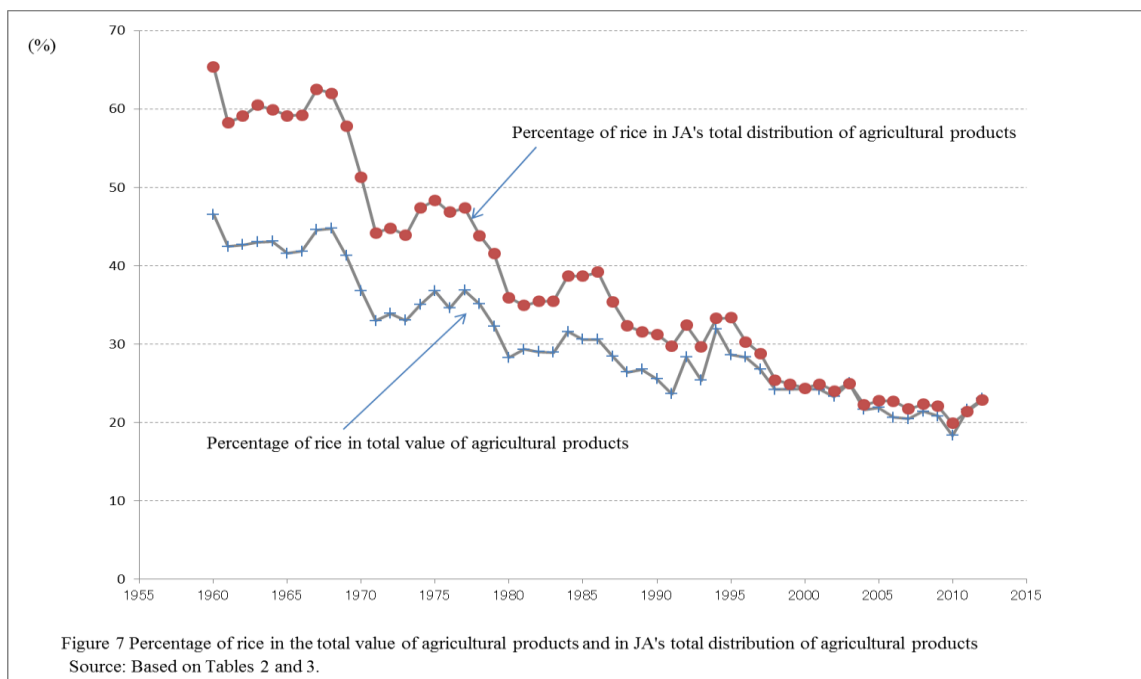


Figure 6. Percentage Utilization of Coop. Channel for JA's supply for farming  
 Source: Based on Table 3.



## REFERENCES

- Godo, Y., "The History of Japan's Post-Pacific-War Rice Policy," *FFTC Agricultural Policy Platform* (Food & Fertilizer Technology Center for the Asian and Pacific Region), November 1, 2013.
- Godo, Y., "The Japanese Agricultural Cooperative System: An Outline," *FFTC Agricultural Policy Platform* (Food & Fertilizer Technology Center for the Asian and Pacific Region), May 30, 2014a.
- Godo, Y., "The Significance of Non-farmers in Japanese Agricultural Cooperatives," *FFTC Agricultural Policy Platform* (Food & Fertilizer Technology Center for the Asian and Pacific Region), July 4, 2014b.
- Godo, Y., "Estimating Agricultural Cooperatives' Share of Agricultural Input and Output Markets," *FFTC Agricultural Policy Platform* (Food & Fertilizer Technology Center for the Asian and Pacific Region), March 2, 2015.
- Ministry of Agriculture, Forestry and Fisheries, *Sogo Nokyo Tokei Hyo* (Statistics of Agricultural Cooperatives), various issues.
- Ministry of Agriculture, Forestry and Fisheries, *Nogyo Shokuryo Kanrensangyo no Keizaikeisan* (Social Accounts for the Agricultural and Food Industries), various issues.

Submitted as a resource paper for the FFTC-NACF International Seminar on Improving Food Marketing Efficiency—the Role of Agricultural Cooperatives, Sept. 14-18, NACF, Seoul, Korea