

Introduction

Most fresh oranges (oranges, hereafter) in Japan are imported, and the primary import source is the United States, which accounted for three-quarters of the total in 2004-06. Japan's own citrus production consists principally of a kind of mandarin or tangerine that is not regarded as a close substitute for navel oranges.¹ Japan liberalized its rules for imports of oranges as a result of the 1988 Beef-Citrus agreement with the United States. After a 3-year transition period, Japan replaced existing import quotas with ad valorem tariffs in 1991.² The tariffs vary seasonally. Originally set at 20 percent for June through November and 40 percent for December through May, the tariffs were further reduced gradually to 16 percent and 32 percent, respectively, by 2000.

Japan's total imports of oranges, predominantly from the United States, increased steadily from about 111,600 tons in 1985 to 190,400 tons in 1994, the peak year, and then gradually declined to about 136,200 tons in 2000 and 120,900 tons in 2006, respectively (table 1).³ During this period, Japan fell from the top overseas market for U.S. oranges to the third highest position.

Consumption of oranges in Japan mirrors the product's import history there. The most reliable source of information about orange consumption in Japan is the annual report of the *Family Income and Expenditure Survey (FIES)* by Japan's Statistics Bureau (see box, "*Family Income and Expenditure Survey*"). Oranges, apart from mandarins and other domestic

¹Partly because of seasonal import tariffs, which are higher in December-May, there are strong seasonal differences in citrus consumption in Japan, with most mandarins consumed in October-February, and most navel oranges consumed in March-September. For more information, see Mori et al., 2008.

²See Mori et al., 2008.

³Declines in imports in 1991 and 1999 reflected short supplies caused by harvest failures in California.

Table 1

Japan's imports of fresh oranges and country shares

Calendar year	Total <i>Metric tons</i>	CIF price <i>Yen/kg</i>	From:			
			U.S.	Chile	S. Africa	Australia
			<i>Metric tons</i>			
1985	111,635	195.2	110,462	0	0	848
1986	117,300	140.9	115,968	0	0	938
1987	123,425	142.2	122,192	0	0	887
1988	115,347	141.6	114,810	0	0	482
1989	128,372	144.5	125,913	0	0	1,942
1990	145,188	143.7	143,118	0	0	1,833
1991	82,017	220.5	75,161	0	0	3,119
1992	171,701	114.2	166,398	0	1,518	3,366
1993	165,420	104.7	155,728	0	5,151	4,539
1994	190,376	99.7	182,517	0	3,667	3,668
1995	179,960	96.3	169,579	0	4,374	5,866
1996	154,086	111.5	135,683	38	5,905	11,960
1997	171,269	105.3	147,624	87	14,161	8,385
1998	150,470	117.7	131,866	25	9,210	7,357
1999	89,703	152.5	46,204	539	13,846	12,460
2000	136,150	82.3	116,951	1,153	8,547	6,245
2001	126,203	103.7	104,152	3,680	9,337	7,238
2002	103,873	105.1	79,611	4,958	8,028	8,765
2003	117,087	94.9	88,068	6,120	13,276	9,238
2004	112,937	97.2	85,524	10,408	10,216	6,493
2005	115,433	99.6	84,269	11,382	10,960	8,443
2006	120,875	113.0	88,179	9,440	7,714	15,522

Note: CIF means cost, insurance, freight.

Source: USDA, Economic Research Service, using trade data of Japan.

citrus varieties, were first itemized in *FIES* in 1987. As measured by *FIES*, per person, at-home consumption of oranges increased from 830 and 737 grams (g) in 1987 and 1988, respectively, to 924-940 g in 1994-96 and then gradually declined to 533-585 g in 2005-06 (table 2). It is estimated that at-home consumption accounts for approximately 70 percent of the total distribution of oranges in Japan.⁴

Like consumption of oranges, consumption of fresh fruit in general has been declining steadily in Japan since the mid-1970s. Per capita at-home consumption of aggregate fresh fruit declined consistently from 49.7 kg in 1975 to 27.8 kg in 2006 (fig. 1). Per capita consumption of mandarins declined from 19.97 kg in 1975 to 4.55 kg in 2006.

This report assesses various factors that may be related to the decline in at-home orange consumption in Japan since 1995. It is difficult to attribute the decrease to either an income or a price factor because neither factor has changed much in recent years. Living expenditures per person (a proxy for household income that is reported in *FIES*) in Japan increased slightly from 1987 to 1995 and then remained at about the same level through 2006 (all in constant 2005 yen). The price index for oranges reported in the CPI declined from 153.3 in 1987 to 100.9 in 1996 (deflated by 2005 aggregate CPI) and remained at the same level since then (fig. 2).⁵

The real price index for fresh fruit (deflated by aggregate CPI) increased slowly from 102.7 in 1975 to 108.1 in 1995 and then slightly decreased to 104.0 in 2006 (2005=100) (fig. 3).

⁴Ito, 2006: at-home consumption (*FIES* per person consumption times total population) is estimated at 60-65 percent of imports. Ito surmises that 10-15 percent of total imports may not be suitable for normal fresh marketing due to spoilage, and the like. At-home consumption of the marketable share would thus be about 70 percent.

⁵Price spikes in 1991 and 1999 reflected short supplies caused by harvest failures in California.

Table 2

Household purchases of fresh oranges in Japan

	Quantity		Real price index ¹
	Per household	Per person	
	Grams		2005=100
1987	3,046	830	153.33
1988	2,676	737	134.83
1989	2,671	740	138.55
1990	2,882	810	135.28
1991	1,835	514	167.83
1992	2,972	842	128.21
1993	3,114	892	102.30
1994	3,208	924	98.41
1995	3,216	940	95.53
1996	2,575	771	100.60
1997	2,844	851	100.88
1998	2,458	743	99.42
1999	1,257	381	137.18
2000	2,059	622	94.62
2001	1,981	604	97.44
2002	1,733	535	100.00
2003	1,807	561	101.10
2004	1,610	505	97.31
2005	1,691	533	100.00
2006	1,848	585	101.60

¹Orange Consumer Price Index (CPI) deflated by CPI for all goods.

Source: USDA, Economic Research Service, using data from *FIES*, various issues.

Family Income and Expenditure Survey

The *Family Income and Expenditure Survey*, or *FIES*, is used to depict households' monthly finances and to produce basic statistical data on expenditures of all households by cities, regions, income classes, etc., for planning national economic and social policies. *FIES* has been conducted since 1946 with ongoing modifications but with time-series consistency maintained as much as possible.

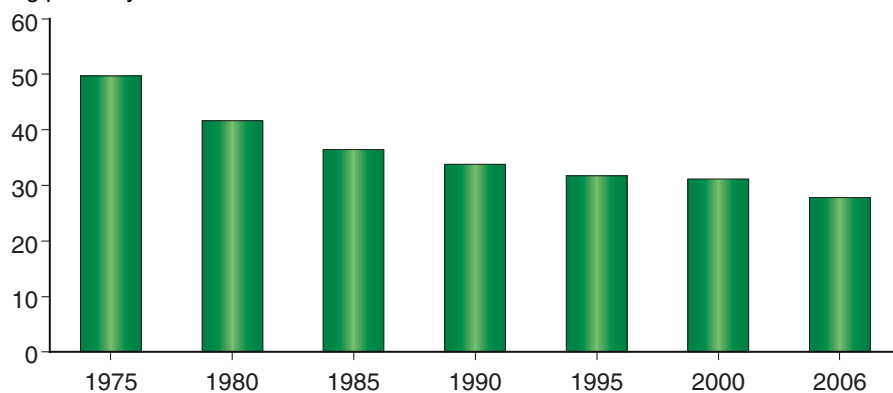
The survey questions approximately 9,000 households, selected by random sampling from all consumer households in all prefectures of Japan, excluding one-person student households. Each household records daily expenditures for 6 months and is then replaced by another household. Each month, one-sixth of the households are replaced.

For many food items, the survey records both expenditure and quantity purchased. In addition, it collects information relating to income and household composition and type. Results are conveyed in monthly and annual reports, published by the Consumer Statistics Division of the Statistics Bureau, Ministry of Internal Affairs and Communication.

Figure 1

At-home consumption of fresh fruit in Japan

Kg/person/year

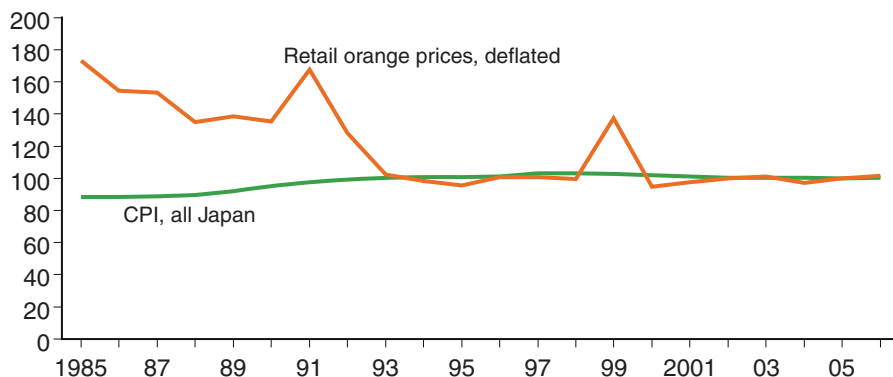


Source: USDA, Economic Research Service, using FIES household survey data.

Figure 2

Orange prices in Japan

Index, 2005 = 100



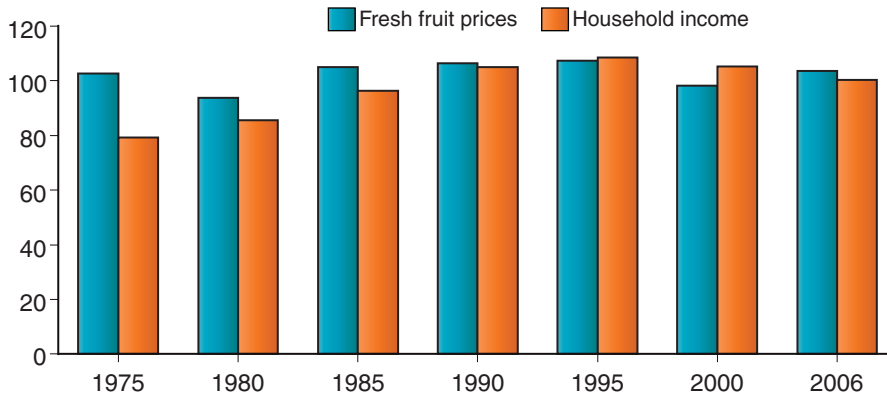
Notes: CPI = Consumer Price Index.

Source: USDA, Economic Research Service, using data from the Statistics Bureau, Ministry of Internal Affairs and Communication, Japan.

Figure 3

Real prices of fresh fruit and real household income in Japan

Index, 2005=100



Note: Fresh fruit CPI deflated by aggregate CPI.

Source: USDA, Economic Research Service, using consumer price indexes (CPIs) from Japan's monthly CPI Report.

On the surface, it appears that at-home consumption of fresh fruit decreased markedly at the same time that income increased substantially (and then remained the same), while fresh fruit consumer prices did not change appreciably over the period. However, a previous study, which analyzed panel data by household types for 96,000 households annually from 1982 to 2001, demonstrated that fresh fruit is an income-positive good (Mori et al., 2006b)—the wealthier the household, the greater the quantity of fresh fruit consumed. The consistent decline in fresh fruit consumption in Japan over the past three decades stems from factors that go beyond household income and price. So, too, does the decrease in orange consumption in the past decade.⁶

Based on recent findings (Mori et al., 2006a; Mori et al., 2006b), this study hypothesizes that the decline in consumption might be at least partially attributed to generational change: more concretely, that today's younger cohorts of Japan's population have moved away from eating fresh fruit, and oranges as well, for unknown reasons (MAFF, 1995).

⁶See "Economic Analysis of Period Effects on Orange Consumption—Are Oranges Normal Goods in Japan?", on page 14, for an economic analysis of orange consumption.