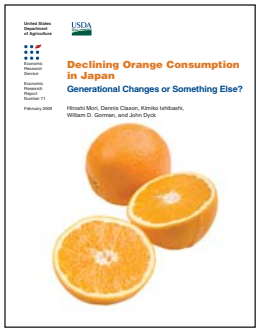
ERS Report Summary

Economic Research Service | February 2009 | U.S. Department of Agriculture



This is a summary of an ERS report.

Find the full report at ***www.ers.usda.gov/publications/err71***

Declining Orange Consumption in Japan
Generational Changes or Something Else?

Hiroshi Mori, Dennis Clason, Kimiko Ishibashi, William D. Gorman, and John Dyck

Japan, a leading market for U.S. oranges, has registered declining consumption of oranges, and fresh fruits in general, in recent years. At the same time, Japan's economy has seen little growth and its demographic changes have been profound as its elderly population has increased rapidly as a share of the country's total population. The effects of aging and of generational change on food consumption appear to be major factors affecting orange consumption in Japan.

What Is the Issue?

Since about 1995, orange consumption (in aggregate and per person) has fallen in Japan. One theory attributes that decline to the aging of the population and the fact that younger Japanese eat fewer fresh oranges than older Japanese. Orange prices and income levels are also cited as factors that may be contributing to the dropoff in orange consumption over time. Suppliers to Japan's orange market, largely U.S. growers, may benefit from information on factors triggering the decline as they plan future market strategies in Japan and in such countries as South Korea, which is also characterized by an aging population.

What Did the Study Find?

As individuals in Japan grow older, they eat more oranges; however, older generations of Japanese are being steadily replaced by younger generations who, overall, eat fewer oranges. On balance, the effects on consumption associated with aging and birth cohort membership are mostly offsetting. Prices affect orange consumption in Japan, but household income does not. Even after the analysis accounted for price and demographic variables, a strong downward trend was evident in Japanese orange consumption.

Specific findings include the following:

- Studies show that as Japanese age, they eat more oranges. Thus, today's Japanese youth are likely to increase their orange consumption as they grow older. The aging of Japan's population therefore has a positive effect on orange consumption.
- This analysis estimates, however, that, even in old age, today's younger Japanese will not match the level of orange consumption of today's elderly Japanese. The generational replacement of older birth cohorts by younger birth cohorts therefore has a negative effect on orange consumption in Japan.

- Orange prices in Japan dropped during 1987-95, the first half of the period studied. Orange consumption increased until 1995, perhaps partly in response to the price drops. Price changes since 1995 have been slight. Orange prices have a significant effect on consumption.
- The analysis revealed a strong trend away from orange consumption over time, which was not explained by the effects of demographic variables, prices, or household income.

How Was the Study Conducted?

The study relied on data from Japan's *Family Income and Expenditure Survey*, which collects information on daily expenditures from 9,000 households each month. The survey has gathered information on orange consumption since 1987. The data are reported based on age of the head of the household. Aggregate household orange consumption, rather than consumption by each household member, is reported. The study used detail on the ages of the members of each household to estimate consumption by individual members of different ages. These data were the basis for estimates of age/period/cohort effects. Estimates of consumption per person with the age and cohort (generation) effects netted out were used to investigate "period effects": events, such as price and income changes, that could affect consumption in a given year. These time-series regressions (on own price, income, and a measure of time) determined an estimate of the price elasticity of oranges, as well as a time trend.

Since income elasticity was not significantly different from zero in the time series investigation, various cross-sections of the household data were sorted by income for further study. These cross-sections also failed to show a strong influence of income on orange consumption in Japan. Demographic variables were used to project consumption to 2017, to examine the extent to which they could lead to further declines in consumption, in the absence of other changes.