

Conclusions

The orange market in Japan, largely supplied by U.S. growers, has declined since the mid-1990s. Declining consumption per person is difficult to explain using the effects of income and price changes. Consumption per person, defined as simple division of household consumption of oranges by all household members, ignores differences in age, which may affect consumption. In fact, it is readily apparent that both age and cohort membership affect household orange consumption in Japan.

Both cohort and age effects are found to be strong. As individuals age, they generally eat more oranges per year, according to this analysis. Membership in a decadal birth cohort that was born in the first half of the 20th century is associated with relatively high levels of orange consumption; decadal birth cohorts since the mid-20th century have consumed progressively fewer oranges. These two demographic effects have tended to cancel each other out.

The Japanese market is quite important to U.S. producers. This investigation indicates that consumption of oranges may decline further, both as a result of an unexplained, but strong, negative time trend and as a result of generational changes: as today's older cohorts die off, U.S. oranges are losing their best customers.

It appears that the price of oranges does matter to consumers in Japan. Reducing or eliminating tariffs could lead to lower orange prices in Japan. Also, reductions in the margin between import and retail prices would lead to lower retail prices. Substantially reduced retail prices of oranges might appeal particularly to young households, which typically have lower incomes among all households in the Japanese labor market.

Japan's household consumption data provide an excellent opportunity to study consumer behavior. In the case of consumption of fresh fruits, including oranges, it appears that systematic, age-related changes are underway that lead to lower consumption of foods that are generally regarded as good for health. Further studies of consumption of fresh fruits and other foods in other countries may also show strong effects of age and cohort membership. Studies establishing the presence and extent of such effects can provide the basis for consumer surveys that examine why these effects occur and what marketing steps might be effective in addressing them.