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Measuring the Impacts of Off-Season Berry Imports

Carlos Arnade and Fred Kuchler

What Is the Issue?

In recent years, a wide variety of fresh produce has become available to U.S. consumers during the winter. Increased off-season production domestically and imports of fresh produce into the United States, especially from the Southern Hemisphere (where the production season is opposite to that of the United States), offer consumers increased availability, more varieties, and, possibly, lower prices. Consumer benefits from off-season produce availability could be large, but there is little empirical evidence of the dollar value of these benefits.

Focusing on fresh berries—strawberries, blueberries, blackberries, and raspberries, which together account for 16 percent of retail fresh fruit expenditures in 2015—this study asks two questions: What is the value to U.S. consumers of the recent increase in the availability of fresh berries in winter (i.e., the value of having some berries available in winter rather than having none)? Second, how large would the consumer benefits be if these berries were available at in-season (spring) prices during the off-season (winter) in the United States?

What Did the Study Find?

The largest benefits (measured as an increase in consumer well-being by identifying the dollar value consumers place on greater availability) were associated with increasing berry availability from zero to current levels; smaller benefits might accrue from lowering off-season prices to in-season levels. Among the four berries, benefits are largest for strawberries. Annual consumer benefits of increasing wintertime strawberry supply from zero to its current level are 89 percent of average annual expenditures on all berries. Looking forward, rather than taking a historical perspective, if consumers paid springtime produce prices in the winter for strawberries (i.e., if off-season availability were substantially increased from current conditions), that change would generate benefits of \$520 million annually, or 19 percent of average annual expenditures on all berries.

Benefits of increasing the supply of blueberries from zero to its current level were estimated to be \$377 million, or 14 percent of annual expenditures on all berries. If current off-season availability of blueberries were increased (reduced seasonality), consumers would receive a \$451-million benefit. Benefits of the initial increase in the supply of raspberries were estimated to be \$225 million, with an additional \$232 million possible from further reductions in seasonality.

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Benefits of the initial increase in the supply of blackberries were estimated to be \$76 million, with benefits of \$23 million from further reductions in seasonality.

How Was the Study Conducted?

Until the early 2000s, strawberries were not widely available in U.S. grocery stores during the winter. More recently, other berries became available in winter. When there were no retail sales, there were no recorded wintertime retail prices. Thus, it is not immediately obvious what price change should be used to judge the value of the increase in availability. This study adapted methods used to estimate consumer benefits of new product introductions—methods that have been used to evaluate novel electronic products and new branded products where prices are always missing prior to products being marketed—in order to estimate the benefits of berries becoming available in the winter.

Benefits were calculated as a compensating variation: the amount of money you would have to take away from a consumer to leave him or her exactly as well-off as before the price reduction. The compensating variation amounts to a difference in expenditures at different sets of prices, holding consumer well-being constant. The expenditure function was calculated based on estimates of a system of demand equations for berries. Berry demand equations were estimated using retail scanner data from 2009 to 2012. Expenditure differences were simulated by incorporating changes in retail prices.

The analysis rests on three assumptions. First, the seasons in which domestic production and imports are available do not overlap: domestic and imported berries are not supplied at the same time, so there is no direct price competition. Second, for consumers, the difference between imports and domestic berries is that transportation costs are higher for imports, raising the retail price above that of in-season domestic berries. Third, estimation is manageable because estimated berry demand focuses on substitution among berries, implicitly assuming berries are a separable group of fruit products for which consumers first decide between purchasing a berry product or something else.