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THE IMPACT OF REDUCED PRODUCE SUPPLIES FROM FLORIDA AND CALIFORNIA IN LATE SPRING ON THE NATIONAL DISTRIBUTION OF U.S. PRODUCE

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Problem

It is quite plausible that the flow of fresh produce from traditional areas of origin may be reduced as a number of evolving circumstances. Such circumstances, in part, may include water quantity and quality problems and urban encroachment in the prominent production areas of Florida and California. If these circumstances begin to affect the distribution of fresh produce in the U.S., producing areas which have not been dominent suppliers may become more important as origins of fresh fruits and vegetables.

The purpose of this study is to examine the impact of reduced supplies in late spring from Florida and California on regional production and distribution patterns in the U.S. for selected produce items. The effect of a 25 percent reduction in supplies from each location, Florida and California, is examined separately.

Methodology

The quadratic programming model used in this study is derived from the work of Takayama and Judge. The spatial equilibrium model, encompassing 13 regions, five produce and three field commodities, is structured to maximize net social payoff. The infrastructure embodies the following components: demand, supply, constraint, and transportation costs.

A base solution is derived which simulates actual conditions in the base period. Perturbed solutions then are derived after exogenously reducing produce supplies from each area, Florida and California, separately. The results of the study are obtained by comparing the perturbed solutions with the base solution.

Major Findings

The results in each case showed increased shipments of watermelons, green peppers, and cucumbers from Georgia, which proxies for Georgia and surrounding states not including Florida, to the northeastern U.S. Since Florida is the larger supplier of fresh vegetables and fruits in late spring and nearer by far to Georgia relative to California, the effect of decreased supplies from Florida on trade flows and production of selected fresh produce in Georgia was more significant than that from California. In addition, the increased supplies of fresh produce from Georgia were not of the magnitude of that decreased in California and Florida. Therefore, total supplies in the perturbed model solutions were less, which were associated with less consumption and slightly higher prices in each market when compared with the base solution.

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