

Tree Fruit Cost Structure and Supply Response

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Problem addressed

Understanding the current tree fruit cost structure and markets along the supply chain (production, packing/processing, and distribution) has repercussions in many dimensions for the Pacific Northwest (PNW). The long life cycle of tree fruit tends to make suppliers less responsive to market prices in the short term. However sudden shocks to the production system can cause wide fluctuations in fruit markets, which have implications to state and federal programs and policies. Moreover, quantifying market supply functions enables one to calculate welfare impacts to the supply chain (including producers) to exogenous shocks and anticipated economic circumstances.

Underlying the supply function is the cost structure of the tree fruit sector in the PNW. It is imperative to better understand the short and long term determinants that drive changes in cost and, hence, supply. Short term determinants include sufficient information of production budgets, the nature of non-fixed factor inputs (energy, labor, etc), and other determinants. Intermediate and longer term determinants include quasi-fixed and fixed inputs (e.g., capital) and regulatory changes. Particularly important are the cases of technology change, emerging markets, policy changes, uncertain economic conditions, and disease outbreaks/SPS issues.

Goal

The specific objectives are to

- 1) DEVELOP cost and production budgets where not currently available for apples, pears, and cherries.
- 2) DEVELOP understanding of cost structures and supply characteristics. Provide trends as well as rigorous econometric analysis.
- 3) DEVELOP an empirical economic model to better understand country or regional level tree fruit production and supply, as well as provide a means to measure welfare impacts to alternative policy scenarios, changing economic conditions, disease outbreaks/SPS issues.

Expected Results

Production budgets will be constructed for the project and general distribution. The supply functions will facilitate empirical welfare measures and will be estimated to evaluate strategies and management alternatives. The trade models can be used to predict changes in interregional or international trade in response to a variety of changes, technology shifts, and various shocks to production and consumption (from project 1) (including shocks produced by disease outbreak, control measures, taxes, or trade bans). The information generated from the study will be disseminated to the tree fruit industry through IMPACT and SES reports, focused presentations of findings to industry participants, trade journals, and in peer reviewed journal outlets.