

Examining Wine Grape Acreage Response in Selected Cool Climate Regions

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Relevance of the Topic

The geography of wine production in the world has changed in recent years and is expected to continue to do so in the decades to come. One of the most striking changes is that commercial wineries today exist in all U.S. states, in the United Kingdom, Scandinavia, and northern Germany, among other regions once thought not suitable for wine production. Quite often these wineries are small in size and were developed primarily for wine tourism purposes. However, the growth in wine production in cool climate regions illustrates that the conditions for growing and marketing these wines are changing.

Furthermore, the composition of wine production in cool climate regions is expanding. These regions are producing more *Vitis vinifera* varieties and a greater proportion of red wine grapes. For example, the share of total production used to produce red wine grapes in Germany, traditionally known as a white wine producing country, increased to 40 per cent in 2009. Much of this increase has been due to more favorable growing conditions for red wine grape varieties and to new wine grape varieties.

Over the past twenty years, we have seen an expansion in traded quantities of wine from “New World” production regions such as the United States, Australia, New Zealand, and Chile. This expansion has made wines from these regions widely available around the world. Although wines from most cool climate regions are not heavily traded yet, they are beginning to attract more attention locally and there is evidence that these wines will become much more important in their domestic markets. Previous economic and statistic research related to wine focuses on topics that are important for warm climate wines, while issues concerning cool climate wines are understudied. Thus, there is a need for research that focuses exclusively on cool climate wines.

Research Objectives and Methodology

The objective of our study is to examine the wine grape acreage response in selected cool climate regions over a period of 20 years. Particularly, we will focus on cool climate states and countries, such as Oregon, Washington, and New York State in the United States, British Columbia as well as Ontario in Canada, and New Zealand. We collected a data set for the period from 1973-2008. The results are expected to facilitate a better understanding of competitiveness issues facing wine grape growers, wineries, retailers, consumers, policy makers, and other stakeholders with an interest in marketing cool climate regions.

To examine this issue, we use a panel dataset that describe wine acreage and the drivers of wine acreage in selected cool climate wine regions. Since wine grape acres are controlled in the old world, we focus on new world cool climate regions (*e.g.*, Oregon, Washington, New York State, New Zealand, and British Columbia as well as Ontario in Canada) and examine the acreage response for the period from 1973-2008. The acreage response models estimate the statistical relationships between wine acreage and several variables across selected regions. We identified six groups of variables that are expected to explain changes in cool climate wine grape acreage over time. Particularly, we include variables regarding 1) wine grape prices; 2) input prices such as labor, fuel, and land; 3) prices of agricultural commodities that compete with land used to grow grapes; 4) promotional efforts regarding wine grape production and wine consumption, 5) the accumulation of local wealth and its influence on the capacity to plant wine grapes as well as to develop new wineries, and 6) policy variables, including crop insurance programs and incentive programs to grub up trees and vines and replant area to new varieties.

Regarding competing commodities in terms of land usage, our analysis shows that apples are the key crops to compete with wine grapes acreage in cold climate regions. Therefore, we estimate a joint estimation of the acreage response for wine grapes and apples. Both models are estimated using

Seemingly Unrelated Regression (SUR). Although we recover the coefficients from the regression in each model, using $n-1$ equations, this study uses two regressions to develop coefficients for each good.

Discussion

Given the recent economic downturn in the specialty crop sector, growth opportunities related new trends should be of great important to the wine industry. In this context, there is a need to examine the determinants of cool climate wine grape acreage over time. Our research results will shed light on the drivers of cool climate wine production across several important regions and highlight the acreage response patterns for this expanding sector over the next twenty years.

Our project findings will be particularly helpful to identify potential niche markets for small and medium-sized producers in the Northern American and international wine sectors of cold climate wine grapes. Additionally, knowledge of the structural relationships between economic characteristics, policy information and wine grape acreage response allows firms, policy makers, and researchers to evaluate production, marketing, and sales strategies and their potential for success.