# Title
What explains changes in grape varietal mixes in Australia’s wine regions?

**I want to submit an abstract for:**
Conference Presentation

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**Keywords**
grape cultivar, winegrape concentration, winegrape similarities, acreage response, Nerlovian adaptive expectations and partial adjustment model

**Research Question**
To what extent are changes in winegrape prices and gross revenues per hectare able to explain changes in winegrape varietal mixes in South Australia’s wine regions this century?

**Methods**
We estimate supply response models based on a Nerlovian adaptive profit expectations and partial acreage adjustment framework with winegrape varietal prices as a key explanatory variable.

**Results**
Econometrics can explain part of the changes in the observed varietal mixes. Short-run supply response elasticities are between 0.07 and 0.09 and long run elasticities are between 0.33 and 0.40.

**Abstract**
In an ever-more-competitive global beverage market, vignerons compete for the attention of consumers by trying to differentiate their wine from others while also responding to technological advances, climate change, and evolving demand patterns. In doing so, they highlight their regional and varietal distinctiveness while keeping an eye on changes in consumer preferences for different varieties.
This paper first examines and seeks to explain the extent to which winegrape varietal mixes vary across regions and over time within Australia and relative to the rest of the world. We are able to do this thanks to a recent dataset that we have compiled for Australia that includes information on area, price and production by region and variety (Anderson and Puga 2023). That allows us to generate yield and gross revenue per hectare, as well as various derivative indexes. The area data by region and variety are able to be compared with those for other regions of the world, as reported in Anderson and Nelgen (2020).

Changes in indexes of similarity across regions and of concentration in the winegrape varietal mix within Australia’s wine regions are reported, as well as multivariate statistical analyses using these indexes. Nationally Australia’s varietal mix has become less differentiated and closer to that of France and the world as a whole. However, individual regions within Australia are becoming more concentrated in their mix of varieties and thus more differentiated from other Australian regions.

In seeking to explain these changes in the winegrape varietal mix, we propose a Nerlovian adaptive expectations and partial adjustment framework. Our main econometric models estimate the extent to which differences in winegrape prices per ton, or gross revenues per hectare, can explain differences in the varietal mixes across regions.

We also estimate a set of regional Nerlovian partial adjustment models in which the dependent variable is the share of total winegrape area planted to a given variety and the explanatory variable of interest is an index of regional comparative advantage of that variety with respect to the other varieties in the region.

These econometric models allow us to estimate both short- and long-run supply response elasticities to altered economic incentives. They do suggest changes in the observed varietal mixes are driven in part by alterations in those incentives. The estimated short-run supply response elasticities are between 0.07 and 0.09, and the long run elasticities are between 0.33 and 0.40. These differences between short- and long-run elasticities, and their smallness as compared with supply response elasticity estimates for annual crops, are expected since viticulture is a very capital-intensive activity with decades-long investment horizons. They are consistent with the small changes in acreages observed from year to year and the very long and slow processes of adjustment to prolonged changes in net profitability in the industry.

If production cost data were to ever become available by region and winegrape variety to add to the gross revenue data, that would possibly lead to even better econometric results.

References cited:

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