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Organic price premium or penalty? A comparative market analysis of organic wines from Tuscany

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ABSTRACT

Previous literature suggests that the price of wine is a function of its intrinsic and extrinsic attributes. Studies have examined the price of wines from various wine producing regions using the hedonic price model to determine the correlation between wine attributes and price. However few studies have examined the relationship between organic production or certification and price. This study uses a hedonic pricing model to examine the price premiums associated with organic production and organic certification for Tuscan red wines produced between 2000 and 2008 in both the Italian and American wine markets. Controlling for a variety of wine attributes, the analysis finds that wines produced with organic practices, but not certified as organic and wines certified, but not labeled as organic receive a higher price compared to conventional wine, for wines with low quality ratings. However, as the wine's quality rating increases, the positive effects of organic practices and certification on price decrease, and for wine with higher quality ratings, organic practices and certification is associated with lower prices relative to otherwise comparable conventional wines.

1. Introduction

Organic agriculture has expanded considerably in the last decade. From 1999 to 2011, worldwide agricultural land devoted to certified organic production increased from 11 million hectares to 37 million hectares, and the market for organic products has increased from $15.2 billion to $59 billion (IFOAM EU Group, 2013). Organic agriculture is a management practice that eliminates the use of synthetic external inputs such as synthetic pesticides and fertilizers, genetically modified organisms (GMOs), preservatives, and other synthetic additives. Organic production makes use of agronomic, biological, and mechanical methods to reach similar results as conventional agriculture. The goal of organic agriculture is to maintain long-term soil fertility, biological cycles, and biodiversity (Food and Agriculture Organization, 1999). In the European Union, 5.6% of agricultural land is under organic farming practices, while in the United States, adoption of organic agriculture is much lower, with less than 1% of cropland and pasture certified as organic (Eurostat, 2014; United States Department of Agriculture, 2013).

Organic viticulture became increasingly popular in the 1980s out of concern for pesticide residues in wine. France is considered the home of organic viticulture, containing half of the world's registered wine growers and being the first government to officially recognize organic farming (Robinson, 1999). In the five top wine-producing countries in Europe (France, Italy, Spain, Germany, and Austria), the share of vineyard land under organic production is between 6.8% and 9.6%, whereas in the United States, only 3.0% of vineyard land is organic (IFOAM EU Group, 2013).[1]

While many organic products receive price premiums above their conventional counterparts, previous work calls into question whether or not organic wines receive price premiums, and actually suggests that wine labeled as organic receives a lower price than conventional wine, holding other factors constant (Delmas and Grant, 2014). Using a hedonic pricing model, this paper analyzes the effects of organic production, organic certification, and organic labeling on the prices received for Italian wines. Given differences in preferences towards organic products in the United States and Europe, the analysis compares the price effects of certification and labeling in both the American and Italian wine markets, a comparison that has not been undertaken in previous literature.

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[1] These figures reflect overall grape production and are not limited to vineyards producing only wine grapes.

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2. Organic products

2.1. Preferences for organic products

For many products, organic production costs more than its conventional alternative. In order to make organic production viable, consumers must demand organic products and be willing to pay higher prices for these products. Preferences for organic products vary across countries and across consumers within a given country.

In Italy, nearly 60% of the population regularly purchases organic products, either exclusively or in addition to conventional products (Pellegrini and Farinello, 2009). Studies have shown that purchasers of organic products tend to be health conscious individuals with a positive attitude towards organics and a high awareness of the difference between organic and conventional products. They are generally concerned about the impact of the production processes on the environment and believe that organic products are healthier and of a higher quality (Chinnici et al., 2002; de Magistris and Gracia, 2008; Saba and Messina, 2003; Boccaletti and Nardella, 2000). Surveys of Italian consumers have shown that some consumers are willing to pay a premium for organic products, ranging from 10 to 40% of the conventional price (Boccaletti and Nardella, 2000; Chinnici et al., 2002; Pellegrini and Farinello, 2009).

Many studies have been conducted to identify the typical organic consumer in the United States and their willingness to pay for organic products (Batte et al., 2007; Govindasamy and Italia, 1999; Lin et al., 2008; Kolodinsky, 2008; Nie and Zepeda, 2011; Li et al., 2007; Onyango et al., 2007; Xie et al., 2016). These studies, mostly conducted as consumer surveys, have shown that the price premiums consumers are willing to pay for organic products range from 10% to 60% of the conventional price depending on the product and the characteristics of the respondents. In general, consumers of organic products are young (less than 30 years of age), are either of a lower income bracket or a higher than average income bracket (a bimodal distribution), are female, and have a college level of education or higher.

2.2. Organic labeling

While some consumers are willing to pay a price premium for organic products, they will only do so if they know the product is actually organic. Since there is no way to distinguish organic and conventional products in most cases, labeling provides a way for consumers to distinguish organic products from conventional products, and for producers to differentiate their organic products from conventional equivalents.

In the United States, producers must pay third-party certifying agents to certify that their production practices meet the standards set by the USDA National Organic Program. Once certified, the product can carry the USDA organic logo (Fig. 1) (United States Department of Agriculture, 2000). In addition to this label, producers can include other logos signifying additional environmental or fair-trade attributes of a product if they can seek out supplementary certification (Horne, 2009).

In the European Union, producers of organic products can include the EU organic logo (Fig. 1) once their products are certified. European producers can undergo further certification and include additional logos on products as well. Many country or industry-specific certification schemes allow producers to use ecolabels when regulations for specific industries do not exist as was the case for organic wine, discussed below, or when those production practices meet stricter standards than those set by the European Commission (European Council, 2007).

2.3. Organic wine policy in the US

The U.S. has two tiers of organic certifications for wine. The first is for "organic wine." In order to label wine as organic wine, all grapes and agricultural ingredients used in the wine must be certified organic. Allowed non-agricultural ingredients cannot exceed 5% of the total volume. Sulfur dioxide, a common preservative added to wine, is not allowed in organic wine. The second tier is wine "made with organic grapes." In order to label wine with this designation, all grapes used in the wine must be certified organic, but the other ingredients do not have to be organic. This category of wine can also contain sulfur dioxide (USDA, 2012).

2.4. Organic wine policy in the EU

While a European standard has existed for organic grapes since 1991, until recently, no European standard existed for organic wine. The new standard, set by Regulation (EU) No. 203/2012 was implemented for the 2012 harvest (USDA, 2012).

All wines in the dataset were produced prior to the 2012 harvest, and price data were collected between May and July 2012, prior to the release of any wines that could bear the new European organic wine logo. Due to the previous absence of a European standard, individual countries, producers and/or organic certifiers implemented their own organic standards for winemaking. Additionally, international organizations such as Demeter certify wine that meets their production standards.[2] While certifiers existed prior to the 2012 regulations, due to a lack of uniform regulations, some wines claimed to be organic without being certified. This allows us to examine three categories of "organic" wine: wines that producers claim to be organic that lack third-party certification, wine that is certified organic by a third-party certifier but not labeled as organic, and wine that is certified and labeled as organic.

2.5. Price premiums for organic wine

Studies have been conducted to determine consumers' attitudes towards or willingness to pay for organic wines (Brugarolas Mollá-Bauzá et al., 2005; Forbes et al., 2009; Remaud et al., 2008). The literature has shown that attitudes concerning organic wines are generally positive, with some consumers indicating that they would be willing to pay a premium for them. However these results differ between regions and consumer segments.

In Europe, opinions about organic wines vary. A study of European consumers indicated that consumers believed organic wines were healthier than conventional wines but that they did not taste as good as conventional wines (Stolz and Schmid, 2008). However, a study of Spanish wines found an average price premium of 17% for organic wine when surveying consumers about hypothetical bottles of wine (Brugarolas Mollá-Bauzá et al., 2005).

While Europeans may value the possible health attributes of organic wine, Australian and New Zealand consumers value sustainably produced wine. A survey of New Zealand shoppers analyzed attitudes regarding environmentally sustainable wines. The authors found that 75% of respondents would prefer to drink wines made using environmentally sustainable practices, and 72% indicated an intention to purchase a sustainable wine over a conventionally grown wine. The study also found that 93% of respondents wanted to see labels containing information about the environmental qualities of the wine. Among respondents, 73% indicated that they would be willing to pay more for an environmentally sustainable

[2] Demeter and Biodyvin biodynamic certifications will continue even though the country-specific organic certifications will now shift to the new EU standard under Regulation (EU) No. 203/2012.