Quality sorting and trade: Firm-level evidence for French wine*

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Abstract

Investigations of the effect of quality differences on heterogeneous performance in exporting have been limited by lack of direct measures of quality. We examine exports of French wine, matching the exporting firms to producer ratings from two wine guidebooks. We show that high quality producers export to more markets, charge higher prices, and sell more in each market. Our model predicts quality sorting: the more difficult a market is to serve, the better on average will be the firms that serve it. Our findings point to the empirical importance of quality sorting in one industry and could be extended to other industries.

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1 Introduction

Why do some firms export more intensively and extensively than others? In the seminal papers of Melitz (2003) and Bernard, Eaton, Jenson, and Kortum (2003) the answer is productivity differences. However, measures of physical output per unit of input are rarely available at the firm level,[1] forcing reliance on proxies like domestic market shares or value-added per worker. These variables can be driven by primitives other than physical productivity, such as product quality. A separate literature on quality and trade relies on noisy proxies (unit values). We study French wine exports, where we are able to match firm-destination-level export flows to firm-level quality ratings from wine guides.

Prior work on quality and trade has examined both the supply side and demand side. Supply side research asks what makes a country export higher quality goods (as inferred from unit values)? Schott (2004) finds that within goods categories, unit values tend to increase with the exporters' per capita income, capital to labor ratio, skill ratio, and the capital intensity of production. Hummels and Klenow (2005) find that, within categories, price and quantity indexes rise with origin-country income per capita. The elasticities are 0.09 (price) and 0.34 (quantity). The authors interpret their price result as showing why big countries do not suffer from a negative terms of trade effect (as they would in a model without quality differentiation). Rather than drive down the value of their single variety, large countries export more varieties and also higher quantities and prices of each variety. Hummels and Klenow also argue in favor of a model with Romer (1994) fixed costs per export market.

Demand-side papers ask what makes country demand a larger share of high quality goods (again inferred from unit values)? Hummels and Skiba (2004) find that average FOB export price rise with freight costs to destination market. They interpret this as a confirmation of the Alchian-Allen (1969) effect ("shipping the good apples out").[2] Hallak (2006) estimates destination-country income effects and find evidence supporting the hypothesis that richer countries have relatively high demand for high quality. Hallak estimates an interaction between unit values (based on the US import data) and income per capita.[3]

This paper contributes to the quality and trade literature in terms of data and method. "Direct" quality measures compared to "inferred" quality (unit values, market shares). Firm-level quality measures matched to firm-level destination-specific exports. Our model combines the Hallak assumption on preferences for quality with the Baldwin and Harrigan

[1] Foster, Haltiwanger and Syverson (2008) is a notable exception, where the authors observe firm-level quantities and prices separately for a number of industries. They show that traditional TFP estimates confound the effect that physical productivity and demand shocks have on the survival probability of firms, and that demand shocks are important in practice. Note that they deliberately exclude quality sorting from their analysis by selecting quasi-homogenous goods.

[2] The Alchian-Allen effect relies upon freight costs that are less than proportional to product value. An increase in freight costs therefore lowers the relative price of high quality goods leading to an increase in their relative demand.

[3] The majority of the coefficients estimated are insignificant or negative and significant. Hallak's "confirmation" of the theory is based upon finding more significant positive than significant negative coefficients.