

Extended Abstract

Please do not add your name or affiliation

Paper Title | **Markups, Taste and Quality**

**Abstract prepared for presentation at the 96th Annual Conference of the
Agricultural Economics Society, K U Leuven, Belgium**

4th – 6th April 2022

Abstract	200 words max
<p>This paper documents the heterogeneous effects of varying consumer taste and quality on markups of Italian exporters of cheese using a flexible demand side approach. After controlling for prices, we extract both consumer taste and quality from residual export variations. While we capture quality as a firm-product specific demand shifter, taste constitutes a demand shock that is specific to each destination for any given firm-product. Drawing on firm-level customs data, our results suggest that markups rise with distance and fall with tariffs, but these impacts are attenuated for products with higher customer appeal and for products of higher quality.</p>	
Keywords	Consumer taste; product quality; f.o.b. unit values
JEL Code	F12, F14, Q17
Introduction	100 – 250 words
<p>Only recently trade economists have started to shift their focus on asymmetric preferences by investigating the role played by consumer valuations of horizontal attributes of a product. Differences in tastes may therefore partly explain why consumers ever purchase a low-quality item at a higher price. Taste effects in demand models are, however, difficult to estimate because they are unobservable.</p> <p>We measure taste from employing a firm-level dataset on Italian cheese exports. This represents an ideal case study as Italian cheese is widely known for its high quality of which some of the recipes date back to the 12th century. While quality marks the vertical component that is captured as a time-invariant firm-product specific demand shifter and invariant across export markets. Consumer taste, as an additional demand shifter, is specific to each export market.</p> <p>We use these measures to explain the variability of markups charged for each firm-product at a given point in time. Our results first confirm that exporters increase their markups with distance and lower them with tariffs. Second, we show that price setting moves alongside firms' quality choice and consumer preference observed by the firms. We infer that higher taste implies a lack of price sensitivity which may have an effect on the pricing strategies of exporters across destinations. Third, we show that markup elasticities with respect to distance and tariffs decrease in magnitude with taste and quality.</p>	

Methodology**100 – 250 words**

To explore how firms choose their pricing strategy across destinations depending on distance and tariffs in conjunction with taste and quality of their exports we regress the f.o.b unit values in logs as our dependent variable on taste, quality and their interactions with trade costs. We follow the fixed-effect specification of Chen and Juvenal (2020) as we perform estimations at firm-product-time level. This fixed-effect specification captures marginal costs that are invariant across destinations, and renders the variation in unit values to markups. The regression in reduced form reads as:

$$\ln UV_{ivjt} = \beta_1 \log Distance_j + \beta_2 \log Tariff_{vjt} + \beta_3 Taste_{ivjt} + \beta_4 \log Distance_j \times Quality_{iv} + \beta_5 \log Distance_j \times Taste_{ivjt} + \beta_6 \log Tariff_{vjt} \times Quality_{iv} + \beta_7 \log Tariff_{vjt} \times Taste_{ivjt} + D_{ivt} + D_{jt} + \varepsilon_{ivjt}$$

where UV_{ivjt} is the free-on-board price expressed as a unit value of firm i 's exports of product v to destination country j at time t . The quality of a firm's product (i.e. a variety) iv denoted by $Quality_{iv}$, and the taste for that variety in destination country j year t , denoted by $Taste_{ivjt}$ are our calculated indices. The distance $\log Distance_j$ between Italy and country j , and the annual tariff, $\log Tariff_{vjt}$, imposed by country j on cheese imports from Italy in year t are both interacted with our quality and taste measures.

The inclusion of firm-product-time dummies, D_{ivt} , absorbs the direct effect of quality from the regression and forces the identification to exploit the variation in unit values across destinations for a given firm-product-year triplet. We also control for market-specific characteristics by including destination-year fixed effects D_{jt} .

Results**100 – 250 words**

Table (2) below displays our main results from the unit value regression. Column 1 reports the baseline regression for which the firm-product-time dummy is replaced by the firm-time fixed effect. The coefficients are, except for tariffs, statistically significant and have the predicted signs. We find a positive direct effect of taste on unit values which is significant across destinations. We also find a significantly positive correlation for quality and the coefficient of 0.174 indicates that prices represent imperfect proxy for quality. All regressions include destination-year fixed effects such that the relation is identified within the export market. The consideration of firm-product-time fixed effects absorbs the direct effect of quality from the regressions in column 2 and column 3, but the positive correlation between the f.o.b. price and taste remains significant even after exploiting the within-firm-product variation over time. Thus, price setting moves alongside firms' quality choice and consumer preference observed by the firms. We infer that higher taste implies a lack of price sensitivity

which induces firms to increase their markups.

The estimated coefficients on the interactions of distance with taste and quality are negative and precisely estimated, supporting the prediction that the positive impact of distance on markups declines with taste and quality implying that firms tend to raise their prices less for higher quality goods as well as for goods which are highly preferred among consumer in destination countries.

The estimated coefficients on the interactions of ad-valorem tariffs with taste and quality are both positive implying that firms reduce their prices, but less for produces of higher grade and higher customer appeal. The inclusion of destination-time fixed effects in column 3 increases the precision of the estimate of the interaction effect between tariffs and quality.

Table 2: Heterogeneous Effects on Markups

	(1)	(2)	(3)
log distance	0.017*** (0.005)	0.033*** (0.007)	
log tariffs	-0.000 (0.005)	0.001 (0.006)	
taste	0.025*** (0.003)	0.016*** (0.003)	
quality	0.174*** (0.005)		
log GDP	0.012*** (0.005)	0.009** (0.004)	
log distance × quality		-0.014*** (0.005)	0.012*** (0.004)
log distance × taste		-0.011*** (0.004)	-0.004 (0.004)
log tariffs × quality		0.003 (0.004)	0.008*** (0.003)
log tariffs × taste		0.016*** (0.003)	0.010*** (0.003)
Observations	156470	136438	136438
Adjusted R-squared	0.441	0.640	0.644
Firm-year fixed effects	<i>Yes</i>	<i>No</i>	<i>No</i>
Firm-product-year fixed effects	<i>No</i>	<i>Yes</i>	<i>Yes</i>
Destination-time fixed effects	<i>No</i>	<i>No</i>	<i>Yes</i>

Notes: The dependent variable is the log f.o.b. unit value calculated at the HS-8 digit product level. All regressions are performed using ordinary least squares estimation. Robust standard errors clustered at the destination-time dimension indicated between parentheses. ***, **, * denote significance at 1%, 5% and 10% respectively. Intercepts included but not reported.

Discussion and Conclusion	100 – 250 words
<p>In this paper, we take account of some of the attributes of our estimated taste and quality measures obtained from the demand function estimation. To do so we run several regressions to check if our measures of taste and quality deliver estimates of elasticities that are consistent with some theoretical predictions. Irarrazabal et al (2015) show that distance reduces the magnitude of the elasticity of demand to the f.o.b. price in particular for lower-quality products. In other words, firms raise their prices with distance, but less for higher quality exports. Chen and Juvenal (2021) also show in addition that firms reduce their prices with tariffs to compensate for the lower demand due to higher tariffs, but this link is again weaker for higher quality exports as the magnitude of the elasticity of demand with respect to the f.o.b. price falls with quality. We investigate whether these mechanisms also hold for horizontal attributes of the Italian cheese as well. Indeed, we show how firms choose their pricing strategy across destinations as we link calculated unit values with inferred taste and quality measures of export penetration depending on distance and tariffs largely consistent with the theoretical predictions laid out.</p>	