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# High-end variety exporters defying gravity: Micro facts and aggregate implications <sup>☆</sup>



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#### ABSTRACT

We develop a new methodology to identify high-end variety exporters in French firm-level data. We find that they do not export to more countries, but they export to more distant destinations than low-end ones. We also show that in contrast to low-end exporters, distance has almost no effect on high-end variety export(er)s. Because of this lower sensitivity to distance at the micro-level, specializing in the production of high-end varieties has implications for the geography of aggregate exports. Specializing in high-end varieties allows for a greater geographic diversification of aggregate exports – in particular when demand arises from both neighboring and distant countries. It also makes a country better able to benefit from growth in remote destinations.

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### 1. Introduction

Developed countries are specializing, within products, in the production of high-end varieties. While this shift in the industrial pattern of developed countries is increasingly documented, its implications are not.<sup>1</sup> In this paper, we investigate how a specialization in high-end varieties shapes the geography of aggregate exports. We propose a

novel methodology to identify high-end exporters. We then uncover new facts on the characteristics of high-end firms and we estimate the sensitivity of their exports to gravity variables relative to low-end ones. From these estimates, we show that the distinctive characteristics of high-end exporters have important implications for the geography of aggregate exports. Their lower sensitivity to distance in particular makes high-end aggregate exports more geographically diversified and more responsive to changes in the location of demand. This is important since it might end up affecting countries' welfare, volatility, long-run growth, labor market, and inequality.<sup>2</sup>

The methodological challenge for this paper is to identify, within products, exporters in the high-end segment of the market. Our empirical analysis builds on French customs data which report firm-level exports and quantities by product and destination country. To distinguish high-end exporters from low-end ones, we make use of the list of members of the Comité Colbert. This organization is composed of the main brands of the French luxury industry. We (reasonably) assume that these firms export high-end varieties. To identify other high-end exporters, we apply the following rule. Firms that sell the

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<sup>&</sup>lt;sup>1</sup> See Schott (2004), Fontagné et al. (2008), Martin and Mejean (2014) for evidence of specialization. Regarding its implications, only the direct effect on the labor market has been studied (e.g. Verhoogen, 2008; Mion and Zhu, 2011).

<sup>&</sup>lt;sup>2</sup> Brambilla et al. (2012) document why "where you export to" matters. Jansen et al. (2009) find that geographic diversification has an impact on income volatility.

<sup>&</sup>lt;sup>3</sup> The Comité Colbert organizes shows and exhibitions and develops lobbying activities for the luxury industry. See http://www.comitecolbert.com/. There are 76 member firms in the Comité Colbert, including brands as famous and expensive as Baccarat, Cartier, Champagne Bollinger, Chanel, Christian Dior, Hermès, Louis Vuitton, or Yves Saint-Laurent.

same products at the same price at least as Colbert firms are tagged as high-end variety exporters. Our method allows us to distinguish high-end from low-end variety exporters for 200 products that accounted for 10% of total French exports in the last decade.

Collapsing the data by country and variety segment, we find that aggregate high-end exports are more geographically diversified. More than 70% of low-end variety exports are concentrated toward European countries. By contrast, less than 50% of high-end variety exports are directed to Europe. This fact is consistent with a quality version of the Melitz (2003) model in which large high-quality firms serve many markets while low-quality ones select in the easiest (and closest) markets only (Baldwin and Harrigan, 2011; Crozet et al., 2012). However, we show that a careful comparison of high- and low-end exporters challenges this view for two reasons. First, among high-end variety exporters, extremely large players co-exist with very tiny niche producers, as is the case for the rest of the population of firms (Eaton et al., 2011). Second, high- and low-end exporters do not differ significantly in terms of product and destination scope. These two facts go against the theoretical view that high-end exporters are necessarily big firms selling to many markets and low-end ones are small firms selling to few destinations. In reality, the specific geography of high-end aggregate exports which we observe seems to be due to a last stylized fact: conditional on serving the same number of markets, high-end variety firms export to more distant markets on average than low-end variety ones.

To better understand the roots of the peculiar geography of high-end exports, we compare the sensitivity of high-end and low-end variety exports to different gravity variables. We first analyze the margins of exports aggregated by country, product, and variety segment. We then examine the decision to export and the value exported at the firm-country and firm-product-country levels. The results are consistent across specifications. High-end variety export(er)s are more sensitive to average income and income distribution in the destination country, and less sensitive to distance. One striking result from our analysis is that the elasticity of high-end variety exports to distance is very small, slightly above — 0.08. A 10% increase in distance reduces high-end variety exports by 0.8%. By contrast, it reduces low-end exports by 8% which is more in line with the literature.

A simple quantitative exercise demonstrates that the greater geographic diversification of French high-end variety exports is entirely driven by their lower sensitivity to distance. The higher sensitivity to income plays a minor role. If low-end exporters had the same sensitivity to distance as high-end ones, both segments would have the same geographic concentration in the aggregate. We also show that high-end variety exporters are more likely than low-end ones to redirect their sales toward countries where demand is growing rapidly. Their lower sensitivity to distance is again entirely responsible for this. Finally, we show that whether the lower sensitivity to distance shapes a specific geography for high-end exports depends on the actual distribution of world demand with respect to the exporting country: the geographic concentration of high-end and low-end exports would be the same if North America, Eastern Asia and Japan were as close to France as the other EU countries, or if France were as remote from both rich and poor continents as Australia.

#### 1.1. Related literature

Our paper is related and contributes to several strands of the literature. First, it proposes a new method to identify high-end exporters. In the literature on trade and quality, three main approaches have been proposed so far to identify high-quality exporters: unit values (Schott, 2004), parametric measures (Khandelwal, 2010; Hallak and Schott, 2011), and external measures (Crozet et al., 2012). Our approach combines the unit value and external measure approaches. It has two main advantages. Data on Colbert firms allow us to select vertically differentiated sectors, since as suggested by Khandelwal (2010), unit values and quality/appeal of the products are highly correlated in these sectors. Information on Colbert firms also allows us to obtain product-specific price thresholds to identify high-end exporters in French customs data<sup>6</sup>; there is indeed no reason for the price threshold defining a high-end exporter to be the same across products. We run different sensitivity checks on our measure of high-endness. We show that the analysis based on an arbitrary price threshold in terms of percentile is much noisier. We further test how our measure compares to two other measures of quality used in the literature. We find that they are positively correlated but differ along two dimensions. First, highquality firms identified with a structural measure à la Khandelwal et al., (2013) are larger on average than high-end firms. Second, the high-end exporters identified with our method feature a lower sensitivity to distance.

We also contribute to the literature on vertical differentiation and international trade. Some recent theoretical and empirical contributions such as Baldwin and Harrigan (2011), Crozet et al. (2012), or Manova and Zhang (2012) show that top-quality producers are larger and more productive firms serving a higher number of markets. These papers suggest a one-to-one mapping between firm size and scope and quality. Our findings point to the importance of small "niche" producers among high-end exporters. This finding is related to Hallak and Sivadasan (2012) who show that heterogeneity along two dimensions, a firm's "process productivity" and "product productivity", 7 is required to account for the existence of small exporters. It also speaks to Holmes and Stevens (2014) who emphasize the existence of small firms producing custom goods together with large ones producing more standardized goods. However, while these papers rationalize empirical observations thanks to the notions of "product productivity" or "product specificity", our approach is different. We first identify highand low-end variety exporters in the data, and then provide a complete characterization of the two populations. Our finding that many highend exporters are niche producers serving few, often remote markets also fit well with the cases reported by González et al. (2012) in their study of high-end footwear exports in Argentina.

We finally participate in the analysis of the interplay between quality and gravity. So far, the literature has mainly studied the link between the quality composition of trade flows and the characteristics of the importing country. Alchian and Allen (1964) and Hummels and Skiba (2004) show that for a given product, the unit value of US exports increases with the distance and the GDP per capita of the destination country. In the same vein, Manova and Zhang (2012) and Bastos and Silva (2010) have produced a wealth of new stylized facts on export prices at the firm-product level. They show that across destinations, firms set higher prices in richer and more distant countries. The results can be interpreted in terms of quality when prices and quality are positively correlated. However, these papers do not identify high- and lowquality exporters; hence, they cannot directly test for differences between quality segments in terms of the elasticity of exports to gravity determinants. To our knowledge, we are the first to directly show and quantify the different sensitivity of high- and low-end export(er)s to gravity variables. Our results on the higher sensitivity of high-end exports to GDP per capita confirm the importance of non-homothetic preferences and of income distribution to explain trade patterns (Hallak, 2006; Choi et al., 2009; Fieler, 2011; Ray and Vatan, 2013). In a contemporaneous work, Fontagné and Hatte (2013) also rely on data provided

<sup>&</sup>lt;sup>4</sup> The results confirm the importance of non-homothetic preferences and income distribution to explain trade patterns (Fieler, 2011; Choi et al., 2009; Ray and Vatan, 2013) The results on distance echo indirect evidence provided by Alchian and Allen (1964), Hummels and Skiba (2004), and Manova and Zhang (2012) who show that average unit values increase with distance.

 $<sup>^5\,</sup>$  Head and Mayer (2013) analyze 2508 estimates obtained from 159 papers. They find an average elasticity of trade to distance of 0.9 with a standard deviation of 0.4.

<sup>&</sup>lt;sup>6</sup> French Customs data have been extensively used. See among others: Bricongne et al. (2012), Berman et al. (2012), or Mayer et al. (2014).

The latter referring to the firm-level efficiency in producing high-quality varieties.

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