
Paper to be presented at
the DRUID16 20th Anniversary Conference
Copenhagen, June 13-15, 2016

# Near or far: How geographic distance shapes prices in exchange relations

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## Abstract

One of the most vital aspects of market behavior is price setting. Past research shows that social relations between buyers and sellers shape prices by facilitating the exchange of private information. Another stream of work finds that geographic distance between buyers and sellers affects transaction patterns. In this paper, we bring these literatures together and investigate how geographic distance affects prices between exchange partners. Using unusually detailed, proprietary data on transactions in the market for Champagne grapes, we find that conditional on forming a relationship, greater geographic distance allows sellers to extract systematically higher prices from buyers. We show that one underlying mechanism pertains to constraints on the availability of information about the true quality of the seller – in our setting, the quality of his or her work in the vineyard. In other words, for the exact same grapes from the exact same plot of land, growers claim systematically higher quality premiums when they deal with more distant buyers. We discuss the implications of these preliminary findings for research on how social relations affect prices.

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# Near or far: How geographic distance shapes price in exchange relations

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**PRELIMINARY DRAFT**

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**ABSTRACT**

One of the most vital aspects of market behavior is price setting. Past research shows that social relations between buyers and sellers shape prices by facilitating the exchange of private information. Another stream of work finds that geographic distance between buyers and sellers affects transaction patterns. In this paper, we bring these literatures together and investigate how geographic distance affects prices between exchange partners. Using detailed, proprietary data on transactions in the market for Champagne grapes, we find that conditional on forming a relationship, greater geographic distance allows sellers to extract systematically higher prices from buyers. We show that one underlying mechanism pertains to constraints on the availability of information about the true quality of the seller – in our setting, the quality of his or her work in the vineyard. In other words, for the exact same grapes from the exact same plot of land, growers claim systematically higher quality (and prices) when they deal with more distant buyers. We discuss the implications of these preliminary findings for research on how social relations affect prices and the literature on strategic geography.

## INTRODUCTION

Price is a key market mechanism; it determines how actors are valued, how resources are allocated, and who appropriates the rents from these resources (Uzzi and Lancaster 2004). Consequently, the various ways in which social relations between buyers and sellers influence pricing have received much scholarly attention (e.g. Fernandez-Mateo 2007; Uzzi 1999; Uzzi and Lancaster 2004). Relationships have been shown to shape prices by contributing to the governance of interactions between sellers and buyers, for example, where exchange of private information helps improve products or service and reduce costs (e.g., Bidwell and Fernandez-Mateo 2010; Uzzi and Lancaster 2004).

In a different line of research, scholars have also found that geography plays an important role in shaping relations between market actors, including exchange relations (e.g. Sorenson and Stuart 2001; Agarwald and Hauswald 2010; Coval and Moskowitz 1999). This work suggests that geographic distance between two actors determines the likelihood of a relationship by hindering or facilitating access to useful market information (e.g. Sorenson and Audia 2000). Proximity shapes actors' opportunities because information must travel across geography; thus the likelihood of a relationship tends to decline as a function of geographic distance (e.g. Sorenson and Stuart 2001).

Taken together, these findings suggest that geography shapes transaction patterns between exchange partners, which may in turn affect market prices. However, how geographic distance influences prices in economic exchange relations remains an open question. This is an important issue since resources are not always available in one's immediate proximity and casual observation reveals market actors often develop relations

with relatively distant partners. Some scholars have examined variance in actors' propensity to search more or less locally for exchange partners (e.g. Sorenson and Stuart 2001), but without reliable price data, this research cannot examine how geographic distance may shape prices between exchange partners. In this paper, we use detailed transaction-level data to address this gap.

We propose that, by hindering access to relevant information and/or increasing transaction costs, geographic distance may increase or decrease prices, depending on market conditions. In settings where sellers have some pricing power, such as ours, we expect prices to increase as a function of the geographic distance between buyers and sellers. This may be because geographic distance increases transaction costs for sellers, which are passed on to buyers in the form of higher prices. It may also be because geographic distance hinders the transfer of "soft" information - information that is difficult to quantify and context-specific tends to distort at a distance (e.g. Jaffe, Trajtenberg, and Henderson 1993; Almeida, Dokko, and Rosenkopf, 2003; Audia Sorenson Hage 2001). Thus, distance reduces buyers' ability to collect information about and evaluate an organization, its products or services (Chakrabarti and Michell 2013; Ragozzino and Reuer 2011). We propose that sellers can take advantage of these information asymmetries by claiming higher levels of quality and charging distant buyers higher prices for the very same goods.

We examine this question using proprietary, transaction-level data on buyer-supplier exchange relations in the Champagne grape market. This French wine region provides a very conservative setting for our hypothesis: it is relatively small – about 30,000 hectares – so frictions, such as constraints on information or transportation costs,

should be modest. Yet, even in this setting, sellers are less likely to transact with distant buyers[1]. We examine 5,658 realized grape transactions for which we have complete location information, between 478 sellers and 61 buyers over the 2000-2009 period: in line with our prediction, we find that sellers charge systematically higher prices to distant buyers (net of transportation costs). Additional analyses using the quality premium charged by sellers – a component of the final price – show it is partly driving the results: that is, a seller is able to extract greater returns on the quality of his work in the vineyard when transacting with distant relative to close buyers – holding the objective quality of the grapes (i.e. cru) constant. In other words, soft information, such as the quality of a growers' work in her vineyard, distorts at a distance and causes buyers to pay a higher price for the same good, relative to close buyers. In additional analyses, we further probe into this mechanism by exploiting data on two types of sellers: individual grape growers, whose identity is known to the buyer, and cooperatives, whose members pool their grapes together so the identity of the seller is unknown to the buyer. In line with our expectation, the pricing advantage in dealing with distant buyers exists only for individual grape growers, who can claim greater quality of work in the vineyard, and not for cooperatives.

Our study contributes to the literature on how social relations shape prices by showing how geography affects the exchange of private information between market actors. Put differently, by constraining or facilitating access to useful market information, such as quality, geographic distance affects the prices sellers are able to charge. We also contribute to the literature on how geography shapes market transactions by documenting its effect of price, an important market outcome that has received little attention in this

[1] For each additional mile between a buyer and a seller, there is a two percent decrease in the likelihood of a transaction occurring ($p < .000$). Results of these seller FE logistic regressions are not reported here but available from the authors.

particular area. In other words, above and beyond documenting the effects of distance on the likelihood of forming an exchange relationship (e.g. Sorenson and Stuart 2001), we are able to examine its effects on the terms of the exchange. In the discussion section, we discuss boundary conditions for our theory as well as implications of our findings for other markets.

## THEORY

Price is central to the functioning of markets. As one of the most fundamental market mechanisms, it is of great interest to economic sociologists. These scholars have long worked at developing a sociological understanding of prices (Swedberg 1994). Over time, they have documented various ways in which social relations may affect prices: most notably, they show that relations signal a producer's quality, affecting production costs and thus prices; they also show that relations influence prices by contributing to the governance of interactions, e.g. reducing transaction costs and facilitating the transfer of private information. For example, we know that the size of traders' network affects their price-setting behaviors (Baker 1984); that the status of a firm affects the price at which it can sell goods and services (Podolny 1993; Benjamin and Podolny 1993); that relations between borrowers and bankers lower loans prices (Uzzi 1999) as well as the price charged for corporate law services (Uzzi and Lancaster 2004) and that relations between staffing firms, employers and workers help the former create and capture economic value (Bidwell and Fernandez-Mateo 2010). What has received less attention thus far is how geography, and most particularly geographic distance between a buyer and a seller, can affect prices.

Organizational scholars in various subfields have consistently found that the probability that two organizations will interact decreases with geographic distance (e.g. Chakrabarti and Mitchell 2013; Ragozzino and Reuer 2011; Sorenson and Stuart 2001; Agarwald and Hauswald 2010; Coval and Moskowitz 1999). There are several explanations for this phenomenon. One is that distance involves greater transportation costs and logistical challenges for potential exchange partners. But even in e-commerce, where such costs are presumably lower, scholars find that distance impedes trade (e.g. Hortacu, Martinez-Jerez and Douglas 2009). Another explanation pertains to exchange uncertainty and the transfer of "soft" information: information that is difficult to quantify and context-specific, such as information about the quality of a supplier, tends to distort at a distance (e.g. Jaffe, Trajtenberg, and Henderson 1993; Almeida, Dokko, and Rosenkopf, 2003; Audia Sorenson Hage 2001). Distance not only reduces the likelihood of "chance encounters" (Sorenson and Stuart 2001), but also one's ability to collect and/or check valuable information about a potential exchange partner (Chakrabarti and Michell 2013; Ragozzino and Reuer 2011).

While this work provides a good understanding of the various ways in which geographic distance shapes the likelihood of interaction, it has not examined its effect on price, providing a relation is formed. In markets where frictions exist in terms of the availability of information, social relations play an especially important role. We expect that geography will affect the quality of social relations in markets: geographic distance between parties hinders the transfer of soft information and increases exchange uncertainty (e.g. Jaffe, Trajenberg and Henderson 1993; Kalnins and Lafontaine 2004; Mayer, Weber and Wu 2009). Since face-to-face interactions are less likely, the

development of a collaborative relationship is also more challenging. We argue that depending on market conditions, this will affect prices between exchange partners. More specifically, when sellers have some pricing power, we expect that geographic distance will increase the price of a transaction – holding transportation costs constant. This may be because, on the one hand, sellers respond to the greater transaction costs associated with more distant partners by raising their price. On the other hand, buyers may be less able to collect and verify soft information about distant sellers, thus we expect buyers to pay a premium when dealing with these sellers. In sum, potential buyers are less likely to deal with distant sellers but providing that they do, and short of being able to address uncertainty through contractual safeguards (e.g. Weber, Mayer and Macher 2011), we suspect they are not in a position to obtain the best possible price, as compared to local buyers.

**Hypothesis:** In markets where sellers have some pricing power, the greater the geographic distance between a seller and her buyer, the greater the price.

## SETTING

Our setting for this study is the market for Champagne grapes. Champagne is a precisely defined area in France. Only sparkling wines made from grapes grown in that region can legally be called Champagne (see Guy 2007). Champagne grapes are grown in vineyards by grape growers (the sellers) and are generally sold to Champagne houses (the buyers)—such as Bollinger or Moët & Chandon—who use them to produce the sparkling

wine. As mentioned above, this market features an important characteristic for our analysis: sellers have the market power—notably because Champagne grapes are scarce.

Based on their origin (crus), the grapes' quality is measured on an official scale established in the 1920s by a committee of growers and house representatives, under the French government's supervision. Thus there is virtually nothing grape growers can do to improve the "cru" of their grapes. However, growers may vary in terms of the quality of their work in the vineyard, a dimension captured by a "quality premium" paid by the buyer as part of the final price. All transactions are recorded and reported to the professional association (CIVC) to insure the grapes' origin. All transactions occur around the same time of year, immediately following the harvest, which typically occurs between September and November. Because of the relative smallness of the region, search costs and information asymmetries in terms of the availability of grapes or of interested buyers also are minimal – providing a very conservative setting to test our hypothesis. Most sellers sign declarations of intent to supply a given buyer for a number of years (the maximum legal length of these declarations is five years). But even when a seller signs a declaration for multiple years, prices are systematically renegotiated after each harvest. Furthermore, there is no formal coordination between sellers; prices are not agreed upon by a central body.

The legal framework limits the amount of land that can be cultivated for wine production, as well as the yield of the vines. The region has reached peak production (Besse, Tegner, and Wilkins 2006). Although historically some grape buyers have some vineyards of their own—about 10 percent of the vineyard area—since the 1960s, French law has made it difficult for grape buyers to integrate vertically and acquire vineyards. As

a consequence, grape buyers have very low self-supply ratios and thus depend on independent grape sellers for the vast majority of their supplies. In contrast, the grape sellers are less dependent on buyers for distribution: they can produce their own Champagne. In fact, although they represent fairly small volumes, about one in three grape sellers is involved in Champagne production.

Whereas the grape supply is limited, demand for Champagne is booming. The domestic market remains strong, and international demand—especially from countries like Russia and China—has risen dramatically over the past two decades.[2] This has made the grapes a very scarce resource and demand for grape largely inelastic. In what people in the industry refer to as the "supply race," grape buyers compete fiercely to secure access to supplies: "All that is required to sell unallocated Champagne grapes is a 30-second telephone call. They'll be bought, unseen with gratitude and alacrity. They all need grapes desperately" (Jefford 2008). As can be expected, the high demand for and limited supply of Champagne grapes have boosted prices. Industry experts reckon that the Champagne grape is now the most expensive grape in the world.

According to the CIVC, there were 15,567 grape growers in 2009 with an average of 2.18 hectares each. In other words, these are very small businesses: in our sample, the average number of employees is just over three, ranging from a minimum of one to a maximum of nine. Most managers are in the 36–50 age bracket, closely followed by those in the 51–60 age bracket. Usually, these are family businesses: the price of the land has rendered it a valuable patrimonial asset that tends to be passed from one generation to

[2] France is the world's largest exporter of wine in value, but Champagne represents a third of all exports (2.3 billion euros in 2007), whereas it covers only 4 percent of the French vineyard area. It sold 339 million bottles in 2007 (some 46 million more than in 1998), and exports have grown 116 percent in value since 1998 (twice as fast as the other French wine categories).

the next. The typical grape seller is a relative of the original founder, by either blood or marriage: “It’s very rare for a young person to be able to become a grower without inheriting the land from family members” (interviewed grower).

## DATA

We used a mix of qualitative and quantitative data. We conducted qualitative research to understand the general functioning of the grape market, in particular price-setting and local industry norms. We conducted 67 interviews, including with 14 CEOs of Champagne houses, and 37 grape growers.

Our quantitative data comprise the contracts for 5,824 individual transactions between 61 grape buyers (Champagne houses) and 478 grape sellers over the period 2000–2009. A transaction consists in the exchange of a given volume of grapes, at a given level of quality (cru), and for a certain price between buyer A and seller B; thus there may be several transactions between A and B within a given year. These contracts were obtained from one particular agency, which gave us confidential access to their entire database. Note that although these agencies call themselves “brokers,” their role is not to match buyers and sellers but to complete the extensive paperwork required by the CIVC to trace and control the origin of the grapes exchanged. One of the authors spent a week at the agency in November 2009, during the harvest season, to understand the nature of their work and relationships with both buyers and sellers. In line with the nature of their job, all agencies collect the same fee—always paid by the buyer—that is, a two percent commission on the transactions they record. It’s worth mentioning that sellers almost exclusively use one broker, whereas buyers often rely on many brokers. In other

words, our data capture the entire transaction network for grape sellers but not for grape buyers.

We combined these transaction-level data with an additional dataset on buyers and sellers assembled from public sources including (1) DIANE, a Bureau Van Dijk database containing detailed financial information on French private and public companies; (2) the National Registry of Trade of Companies, the official source of financial and legal information on French private and public companies; and (3) the Guide Curien de la Champagne, a biennial publication created in 1991 by Champagne experts.

**Measures**

Our unit of analysis is the transaction, but we have measures at the transaction-, seller-, buyer-, and dyad-levels. The data include the following variables, computed annually (see Table 1 for the descriptive statistics).

——Insert Table 1 about here——

**Dependent and independent variables**

*Price.* Our dependent variable is the final price per kilogram paid for grapes in each transaction we observe over our period. The average price per kilo in our sample is FRF 29.97 (about euros 4.49).

*Distance.* Using detailed location data on Champagne houses and grape growers, we computed a continuous measure of the distance, in kilometers, between a buyer and a seller. In our sample, the average distance between a buyer and a seller is 18.22 kilometers. We are unfortunately missing data on location for some growers, due to their small size, so we can only compute geographic distance for 5,658 observations. Note that

this measure captures the distance as the crow flies between exchange partners but alternative measures, such as the driving distance, yield very similar results.

**Control variables dyad-level**

*Relation duration.* This is the cumulative number of years of exchange relation between the buyer and the seller at the time of the transaction. Since this relationship in unlikely to be linear, we took the natural logarithm of this measure (but all our results hold when this variable is not logged). In our sample, the average relation duration for a dyad is a little over 3 years.

*Past volumes exchanged.* This is the cumulative volume of grapes exchanged within a dyad (in thousands of kilos). We took the natural logarithm of this measure (but all our results hold when this variable is not logged). The average cumulative volume exchanged for a dyad in our sample is 164,000 kilos.

**Control variables: seller-level**

*Seller unique ties,* the number of buyers a seller transacts with in a given year (regardless of the number of transactions conducted by the seller with each buyer). Note that we constructed this variable using the agency data since the custom for growers is to work with only one agency. The average number of ties for a seller in our sample is 1.64.

*Seller size,* or annual grape sales in volume (thousands of kilos) conducted by a seller. We also constructed this variable using the agency data. The average size for a seller in our sample is 56,993 kilos.

**Control variables: buyer-level**

*Buyer unique ties,* or the number of sellers a buyer transacts with in a given year (regardless of the number of transactions conducted by the buyer with each seller). The average number of ties for a buyer in our sample is 5.33. Note that we are likely to severely underestimate the population's true mean, since buyers often use several agencies and it is not possible to obtain reliable data on buyers' exchange relations outside our agency's sample.

*Buyer size,* or annual purchases in volume (in thousands of kilos) conducted by a buyer. To construct this variable, we used data assembled from the Guide Curien and DIANE, since buyers often use several agencies; a within-agency sample measure would underestimate the total annual volumes purchased by a Champagne house.

*Buyer profitability,* or a buyer's annual return on assets (RoA). We include this variable because sellers may price-discriminate based on a buyer's profitability. The average profitability of a buyer in our sample is 4.96%.

**Control variables transaction-level**

*Grape quality.* The quality of grapes exchanged is officially recorded on a scale, called echelle des crus, that ranges from 80 to 100. In our sample, the average quality of grapes exchanged is 90. Based on the grapes' origin, industry members distinguish between low-rated grapes—with no designated *crus* (rated between 80 and 90)—and high-rated grapes: Grands and Premiers *crus* (rated above 90). We therefore create three binary variables: one for grapes rated between 80 and 90, one for grapes with *crus* between 90

and 95, and one for grapes with *crus* between 95 and 100.[3] Note that the same grower may sell grapes of different quality levels, based on the location of his/her plots of land.

*Transaction volume,* or the volume exchanged in thousands of kilos. An average transaction in our sample is 22,065 kilos of grapes.

*Share of annual volume,* or the volume of grapes that each transaction represents as a percentage of the total annual volume exchanged within the dyad. To compute it, we divided *transaction volume* by the total annual volumes exchanged within the dyad.

We included *year* dummy variables to control for variations in harvests from one year to another.

### Estimation strategy

To analyze whether sellers charge higher prices to distant buyers over our period of observation, we used panel-data estimation methods. Because we take the seller's perspective, since sellers have the pricing power in our setting, we use seller fixed-effects with robust standard errors clustered by both seller and buyer (Kleinbaum, Stuart and Tushman 2013).

## ANALYSES

### Preliminary results

Descriptive statistics, at the transaction level, are available in Table 1 for all variables. Results for our main analyses are summarized in Table 2. In all models, standard errors

[3] In our analyses, the highest-quality grade is the omitted category. Our results are not affected if we use a continuous quality measure ranging from 80 to 100 or use alternative cut-off points for the binary variables.

are robust and clustered by buyer and seller. Model 1 is a seller fixed effects model. It confirms that the greater the distance between a buyer and a seller, the higher the price charged for the same grapes. An extra kilometer between the two parties increases the price charged by FRF .011 a kilo[4] – for an average seller in our sample, this suggests that a 1 standard deviation increase in geographic distance to the buyer (about 18 kilometers) involves an additional FRF 11,284 (about € 1,720) a year.

——Insert Table 2 about here——

In our next analyses, we further examined what drives this effect. We proposed that sellers extract higher prices from distant buyers because the latter may be less able to collect reliable information about product or service quality. In Champagne, sellers may be able to claim higher quality for their work in the vineyard when dealing with distant buyers. To test this possibility, we first examined whether our main effect is moderated by grape quality, as measured on the official Champagne scale. We reasoned that claims of more skillful work in the vineyards should carry most weight when buyers are purchasing high-quality grapes – by contrast, the handling of grapes should matter less for lower quality grapes. Model 2 in Table 2 shows the results of these analyses: as expected, we find that the interaction between distance and grape quality is positive and significant. This suggests that sellers charge higher prices to distant buyers and that this effect gets stronger as the quality of the grapes being purchased increases.

Second, we split our seller sample between individual grape growers and cooperatives. We then examined whether cooperatives, which pool grapes together so

[4] Note that these results also hold if we use buyer fixed-effects ($\beta = .011$, $p < .026$). Because geographic distance doesn't vary within a dyad, we are unable to run these analyses with dyad fixed-effects.

buyers do not know the identity of their sellers, are also able to extract higher prices when they deal with distant buyers. We reasoned that cooperatives would find it difficult to credibly claim more skillful work in the vineyard for their grapes since grapes come from an anonymous pool of sellers. As expected, we find that only individual grape growers, not cooperatives, are able to extract higher prices at a distance (see models 1 and 2 in Table 3).

Third, we examine whether the seller's reputation moderates the effect of geographic distance on price. We expect that high reputation sellers may be more credible in claiming more skillful work in the vineyard. We collected data on which sellers were granted a medal at the "Concours Général Agricole" between 2004 and 2009[5]. These medals are attributed to farmers by the French government, in a wide variety of agricultural domains, to recognize the quality of their production. Note that medals are attributed to growers for the quality of their Champagne wines rather than grapes, thus it concerns only a third of all grape growers (about 5,000 out of the 15,000 grape growers of Champagne produce their own wines). However, we reason that receiving a medal for the quality of one's wines should send a strong signal to grape buyers that the growers' work in the vineyard is particularly skillful. Results of our analyses are displayed in Table 4: as expected, we find that the effect of distance on price is stronger when sellers have been granted a medal, although this effect is statistically marginal ($p < .10$)[6].

[5] http://www.concours-agricole.com/concours/

[6] One may wonder about the main effect of sellers obtaining a medal on price – the effect is *negative* and significant. It is worth mentioning that sellers who also make wine tend to receive lower prices because grape selling is not their primary business, thus this result is not particularly surprising.

One alternative explanation for our pattern of results could be that sellers use geographic distance as a proxy for buyers' willingness-to-pay: when approached by distant buyers, sellers assume these buyers must have little choice and/or cannot source the grapes they require locally. To assess this possibility, we leverage a specificity of the Champagne wines. These wines can only be made of three grape varietals – chardonnay, pinot noir and pinot meunier. While Champagne houses can produce wine using chardonnay exclusively (so-called "Blanc-de-Blancs"), pinot noir and pinot meunier do not suffice to produce Champagne. Chardonnay also happens to be the rarest grape varietal in Champagne (29.5% of the vineyard area vs. 38.3% and 31.9% for pinot noir and pinot meunier respectively[7]). We reason that if buyers purchase grapes at a distance because they are unable to source locally, this need should be particularly acute for chardonnay grapes. Our analyses show that the type of varietal purchased, in particular chardonnay vs. pinot noir and pinot meunier, does not significantly moderate the effect of geographic distance on price (main effect for Chardonnay: $\beta = .41$, $p < .079$ ; interaction distance × chardonnay: $\beta = .008$, $p < .144$). While preliminary, we think these results do not seem to imply that growers use geographic distance as a signal for buyers' willingness-to-pay.

Overall, we think these analyses confirm that within a given seller, geographic distance affects price. They also tend to suggest that growers may be able to extract higher prices from distant buyers by claiming, for the exact same grapes and plots of lands, more skillful work in the vineyard.

[7] http://www.champagnesdevignerons.com/Découvrir-la-Champagne/Les-cépages-et-les-cuvées.html

## DISCUSSION AND CONCLUSION

Prices are of crucial importance in markets; they allow resource allocation and constitute a critical means by which market participants can appropriate rents (Uzzi and Lancaster 2004). Market efficiency hinges on prices fully reflecting available information, thereby allowing the comparative valuation of goods and services. Economic sociologists have noted that disconnections between market actors often allow for several prices to coexist. By influencing the amount and type of information available to market participants, social relations thus play a role in price setting (Baker 1984; Podolny 1993; Uzzi 1999; Uzzi and Lancaster 2004). They notably influence prices y contributing to the governance of exchange relations (e.g., Baker 1984; Bidwell and Fernandez-Mateo 2010; Uzzi 1999 Uzzi and Lancaster 2004). Yet, because of the difficulty in obtaining price data at the transaction level, there is still a lack of empirical studies in this area (for exceptions, see Bidwell and Fernandez-Mateo 2010; Elfenbein and Zenger 2014; Fernandez-Mateo 2007). Our detailed longitudinal pricing data for transactions on the Champagne grape market allowed us to address this challenge and to contribute to the sociological understanding of prices.

First and foremost, we document a novel pathway through which social relations shape prices, that is, the geographic distance between a seller and its buyers. We show that sellers are able to extract higher prices from relatively distant buyers. We also find that this is in part driven by buyers' evaluation of sellers' work quality in the vineyard: the exact same seller receives higher prices from distant buyers for the exact same grapes. We argue this is primarily due to distant buyers being more constrained in terms of the soft information they can collect and verify about buyers. While very preliminary these

results suggest geographic distance matters for the terms of exchange transactions between buyers and sellers. This is an important finding because resources are not always available in one's immediate proximity – thus market actors often search at a distance for critical resources. Yet, while local actors can collect information about a potential partner through physical inspection or casual conversation with employees, actors located at some distance are dependent on less reliable sources, such as reputational hearsay (Madison, 1974). Even in a very conservative setting such as Champagne, we find there is an economic cost to exchanging with distant partners: more specifically, buyers are charged higher prices based on their restricted access to soft information about the seller's quality. This and open interesting avenues for future research in economic sociology and strategic geography.

**Table 1. Descriptive Statistics and Correlations**

| | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Final price | 29.97 | 5.18 | | | | | | | | | | | | |
| 2 Distance (miles) between buyer and seller | 24.50 | 22.51 | -0.18 | | | | | | | | | | | |
| 3 Relation duration | 1.20 | 0.79 | -0.10 | 0.09 | | | | | | | | | | |
| 4 Past volumes exchanged | 4.60 | 1.29 | -0.09 | 0.08 | 0.73 | | | | | | | | | |
| 5 Seller unique ties | 1.66 | 1.25 | 0.14 | -0.17 | 0.06 | 0.05 | | | | | | | | |
| 6 Seller size | 58.46 | 81.88 | 0.00 | -0.10 | 0.07 | 0.33 | 0.56 | | | | | | | |
| 7 Buyer unique ties | 8.79 | 9.10 | 0.30 | -0.01 | -0.08 | 0.05 | -0.03 | 0.05 | | | | | | |
| 8 Buyer size | 4671.18 | 6658.90 | 0.02 | -0.09 | -0.05 | 0.10 | -0.05 | 0.09 | 0.47 | | | | | |
| 9 Profitability buyer | 5.56 | 5.06 | 0.02 | -0.07 | 0.01 | 0.06 | 0.03 | 0.10 | 0.33 | 0.51 | | | | |
| 10 High quality grapes | 0.96 | 0.20 | 0.29 | -0.23 | -0.08 | -0.13 | 0.06 | -0.06 | -0.05 | -0.10 | -0.01 | | | |
| 11 Medium quality grapes | 0.01 | 0.11 | 0.08 | -0.17 | 0.00 | 0.01 | 0.21 | 0.15 | 0.04 | 0.00 | -0.02 | -0.37 | | |
| 12 Transaction volume | 22.06 | 35.28 | -0.13 | 0.03 | 0.05 | 0.25 | 0.00 | 0.37 | 0.01 | 0.05 | 0.02 | -0.06 | 0.04 | |
| 13 Share of annual volume | 63.80 | 38.32 | -0.20 | 0.03 | -0.04 | -0.27 | -0.05 | -0.17 | -0.16 | -0.08 | -0.05 | 0.00 | 0.00 | 0.27 |

**Table 2. Seller FE regressions predicting final price paid for grapes.**

| | Model 1 | Model 2 |
|---|---|---|
| Distance (miles) between buyer and seller | 0.011* | 0.002 |
| | (0.005) | (0.005) |
| Distance x High quality grapes | | 0.031** |
| | | (0.011) |
| Relation duration | -0.271 | -0.297 |
| | (0.268) | (0.275) |
| Past volumes exchanged | 0.054 | 0.066+ |
| | (0.035) | (0.036) |
| Seller unique ties | -0.038 | -0.039 |
| | (0.038) | (0.035) |
| Seller size | 0.000 | 0.000 |
| | (0.001) | (0.001) |
| Buyer unique tie | -0.004 | -0.004 |
| | (0.004) | (0.004) |
| Buyer size | -0.000 | -0.000+ |
| | (0.000) | (0.000) |
| Profitability buyer | -0.004 | -0.004 |
| | (0.009) | (0.008) |
| High grape quality | 1.151*** | 0.560* |
| | (0.152) | (0.230) |
| Medium grape quality | 0.514*** | 0.458*** |
| | (0.109) | (0.102) |
| Transaction volume | -0.000 | -0.000 |
| | (0.001) | (0.001) |
| Share of annual volume | -0.005*** | -0.005*** |
| | (0.001) | (0.001) |
| Constant | 19.830*** | 20.066*** |
| | (0.203) | (0.245) |
| *N* | 5824 | 5824 |

+ $p<0.1$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Heteroskedastic robust standard errors clustered by both buyer and seller (in parentheses).

**Table 3. Seller FE regressions predicting final price paid for grapes.**

| | Model 1 - Growers | Model 2 - Cooperatives |
|---|---|---|
| Distance (miles) between buyer and seller | 0.017** | 0.004 |
| | (0.006) | (0.008) |
| Relation duration | -0.452 | 0.075 |
| | (0.416) | (0.102) |
| Past volumes exchanged | 0.139** | -0.112+ |
| | (0.053) | (0.058) |
| Seller unique ties | -0.064 | -0.021 |
| | (0.049) | (0.059) |
| Seller size | 0.001 | -0.000 |
| | (0.001) | (0.000) |
| Buyer unique ties | -0.006 | -0.001 |
| | (0.007) | (0.006) |
| Buyer size | -0.000 | 0.000 |
| | (0.000) | (0.000) |
| Profitability buyer | -0.006 | -0.007 |
| | (0.013) | (0.008) |
| High grape quality | 1.263*** | 0.717* |
| | (0.163) | (0.287) |
| Medium grape quality | 0.700*** | 0.094 |
| | (0.096) | (0.275) |
| Transaction volume | 0.000 | 0.000 |
| | (0.002) | (0.001) |
| Share of annual volume | -0.002* | -0.013*** |
| | (0.001) | (0.002) |
| Constant | 19.358*** | 21.189*** |
| | (0.260) | (0.298) |
| *N* | 4330 | 1494 |

+ $p<0.1$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Heteroskedastic robust standard errors clustered by both buyer and seller (in parentheses).

**Table 4. Seller FE regressions predicting final price paid for grapes.**

| | Model 1 |
|---|---|
| Distance (miles) between buyer and seller | 0.011* |
| | (0.005) |
| Seller medal | -1.030+ |
| | (0.618) |
| Distance x Seller medal | 0.015+ |
| | (0.009) |
| High grape quality | 1.151*** |
| | (0.153) |
| Relation duration | -0.272 |
| | (0.269) |
| Past volumes exchanged | 0.054 |
| | (0.035) |
| Seller unique ties | -0.038 |
| | (0.038) |
| Seller size | 0.000 |
| | (0.001) |
| Buyer unique ties | -0.004 |
| | (0.004) |
| Buyer size | -0.000 |
| | (0.000) |
| Profitability buyer | -0.004 |
| | (0.009) |
| Medium grape quality | 0.514*** |
| | (0.109) |
| Transaction volume | -0.000 |
| | (0.001) |
| Share of annual volume | -0.005*** |
| | (0.001) |
| Constant | 19.829*** |
| | (0.203) |
| *N* | . |

+ $p<0.1$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Heteroskedastic robust standard errors clustered by both buyer and seller (in parentheses).

**REFERENCES OMITTED FOR BREVITY**

**AVAILABLE FROM THE AUTHORS**