

**Country-of-Origin Premiums for Retailers in International Trades:
Evidence from eBay's International Markets**

Ye Hu

Xin Wang^{*}

July 2009

Forthcoming in *Journal of Retailing*

* Ye Hu (Phone: 713-743-2181, FAX: 713-743-4572, Email: yehu@uh.edu) is Assistant Professor of Marketing, C.T. Bauer College of Business, University of Houston, Houston, TX 77204. Xin Wang (Email: xinwang@brandeis.edu) is Assistant Professor of Marketing, International Business School, Brandeis University, Waltham, MA 02454.

**Country-of-Origin Premiums for Retailers in International Trades:
Evidence from eBay's International Markets**

Abstract

Using real-world transaction prices in the Internet auction Web site eBay's U.S., U.K., and global markets, the authors study the price dispersion of homogeneous products related to the sellers' country of origin. For both tangible and intangible products and services, sellers from the United States enjoy a price premium. This premium appears to stem from country-of-origin equity instead of trading risk or product quality. The findings of this research suggest potential profitable opportunities in international trade by employing the retailer's country of origin as an arbitrage tool.

Keywords: Price premium, retailing, country of origin, international trade

Modern globalization has made it almost impossible for a regular American consumer to imagine a day without calling a customer service representative located in the South Asian subcontinent, watching Discovery programs shot by Australians, or working out wearing sneakers made in Southeast Asia. Because of the perceived disparities in culture, technology, labor, management, corporate structure, and government regulations however, products or services sold by retailers from different countries, regardless of their homogeneity, may be evaluated differently by consumers. In other words, country¹ of origin (COO) matters. For products that are uniform and comparable, such disparity across countries might be caused by the generally higher risk associated with international trade than with domestic transactions. Risk rooted in the COO often appears as a price discount or premium. If such risk can be measured objectively, any price premium or discount due to COO should fully reflect the level of risk. The question is, does such price premium or discount persist even after controlling for the trading risk?

The goal of this research is not to study complicated international trading scenarios, such as toy imports, for which indirect economic liability is almost impossible to predict and quantify. Instead, we focus on product categories in which transaction risks can be measured objectively. The Internet auction company eBay makes it possible for sellers from different countries to sell through a common marketplace, which grants us a rare opportunity to study the real-world price dispersion of homogenous products in international trade. Ultimately, we are interested in whether a COO-based effect exists for price discrepancies (which we call the country-of-origin premium phenomenon) in homogenous products across sellers with different COOs. If such discrepancies exist, which country or countries benefit most from them in international trade?

¹ The word “country,” as used in this research, has a broad meaning, reflecting an economically independent region instead of a political nation. For example, Hong Kong, a Special Administrative Region of China, is referred to as a “country” in an economic sense.

By empirically analyzing transaction data related to Sony memory sticks, the iPod Nano, World of Warcraft gold strategy, and phone unlocking service, we arrive at conclusions that have important implications for international trade. In a nutshell, we find that U.S. (and, with limited evidence, Canadian) sellers in eBay markets, both domestic and international, enjoy significant price premiums, even for homogeneous products or services. Studies of these four different product/service categories in two eBay markets offer consistent conclusions. The retailer COO premium we discover in eBay's global markets suggests inefficiency (and hence an arbitrage opportunity), likely caused by consumers' irrational perceptions of risk or risk aversion in the context of international trade. Similar to the notion of equity premiums (Benartzi and Thaler 1995; Siegel and Thaler 1997) in the U.S. financial market, according to which riskier investment (equity) enjoys a higher premium than that demanded by its risk, compared with safer investments (government bonds), the existence of the COO premium makes it a profitable means for retailers to arbitrage.

This article contributes to marketing literature in three ways: First, it provides the first examination of a COO premium accruing to the *retailer* rather than to the manufacturer or brand, while controlling for product quality. Second, unlike previous research that uses listed price to examine the COO effect, we use actual transaction prices to assess price premiums. By reflecting real market outcomes, this study offers more interesting and managerially relevant results for global retailers. Third, by exploiting eBay's unique global presence, our research proposes a methodology that effectively teases out many alternative explanations for the observed price variations and quantifies the retailer's COO premium.

The remainder of this article is organized as follows: We first review the theoretical background provided by related research. We conduct three studies pertaining to the transaction

prices of homogeneous physical products and intangible products/services in different eBay markets. Finally, we conclude with some of the implications of our findings.

THEORETICAL BACKGROUND

Extant research on the COO effect generally focuses on issues related to two major areas: the economic aspect and the behavioral aspect. We review this literature and identify its relevance to the pricing topic on which we focus. That is, we present various theories for the existence of price dispersions in international trade to control for any alternative explanations through market selection (i.e., eBay) and product categories in the empirical analysis.

The most important reason for price dispersion emerges from economic theories related to vertical product differentiation (Salop and Stiglitz 1977; Shapiro 1982). We exclude such effects by selecting four product/service categories for this research: Sony memory sticks on eBay's U.S. site, Apple's iPod Nanos on eBay's U.K. site, and World of Warcraft (WoW)² gold strategies and mobile phone unlocking service from eBay's global Web sites. These products are fairly homogeneous, such that we can control for any differentiation that may exist. Specifically, all memory sticks carry the brand name "SONY" and vary only by capacity; all MP3 players are Apple iPod Nanos and differ only in generation and capacity; WoW gold strategies can be categorized as either gold or upgrade strategies; and mobile phone unlocking services vary little by phone brands.

Moreover, through our selection of the focal products/services, we can exclude several alternative explanations proposed by economists regarding the existence of price dispersion across *homogeneous* goods. First, Kreinin (1961) shows that tariffs create price discrepancies across countries, but according to the Harmonized Tariff Schedule of the United States, solid-

² World of Warcraft, commonly known as WoW, is a massive, multiplayer, online, role-playing Internet computer game produced by Blizzard Entertainment, a division of Vivendi Games. "WoW gold" is a crucial resource in the game that enables players to obtain equipment and upgrades.

state, non-volatile storage devices (i.e., Sony memory sticks) are free of duties. In addition, in the United Kingdom, Her Majesty's Revenue & Customs commands a 2% duty on MP3 player imported from outside the European Union, so we factor this additional duty into the price. Digitally downloadable products are not subject to such duties, nor are excise taxes enforced on any of the product categories we study. Second, we integrate shipping and distribution costs (Anderson and van Wincoop 2004), if they exist, into the total price of the products. Third, we find that no quotas (Anderson 1985) apply. Fourth, eBay's marketplace generally represents a shared platform for the competitive market, so no heterogeneity results from the market structure (Baldwin 1948). Fifth, in an Internet marketplace such as eBay, consumers likely incur minimal search costs (Bond 1984; Stigler 1961), because they can rely on the page map and search capacities. Sixth, intertemporal price fluctuations (Varian 1980) and currency exchange rate fluctuations (Isard 1977) can explain price changes only over time, whereas the scenario we study pertains to price dispersion across products at a single given point of time, which means the effects due to currency exchange fluctuations are inconsequential. If any price dispersion due to COO exists in our analysis, it therefore should be caused by reason(s) other than those indicated in these economic theories.

What else could lead to price dispersion in international trade? Behavioral and brand equity literature sheds some light on this question. From a consumer perspective, research in marketing mainly focuses on how COO influences evaluations of products and intentions to purchase. Thus, prior research identifies such COO effects as "stereotype effects" (e.g., Nagashima 1970), because they are "based on attributes that are inferred, are context dependent, and vary considerably across the members of category" (Maheswaran 1994, p. 354). Bilkey and Nes (1982) summarize research published over 20 years pertaining to the effect of COO on product evaluations. Generally speaking, COO affects beliefs but not attitudes (Erickson,

Johansson, and Chao 1984) and influences consumers' purchase intentions. Maheswaran (1994) uses "stereotype" to describe this effect and finds that when evaluating products, novice consumers rely on COO more than do experts when the attribute information is ambiguous. When they use COO information, novices also interpret subsequent information regarding product attributes in that same light. In other words, COO as a cue for product evaluations does not reflect objective, tangible differences in the products themselves. If the COO effect can be justified with objective measurements such as quality signaling (e.g., Han 1989), we could attribute COO-related price premium effects to these measures. In contrast, if the COO premium is anchored to nothing other than the countries themselves, it represents COO-based equity, conceptually similar to the notion of brand equity in consumer products, which implies that positive brand equity tends to lower the price elasticity and lead to price premiums in branded products, with equal performance (e.g., Keller 1993). Recently, Roggenveen, Bharadwaj, and Hoyer (2007) examined the effects of call center location on consumer expectations of service; the country in which the call center is located does not affect consumers' expectations when the firm is reputable. However, if the firm is less known, consumers expect to experience less satisfaction if the call center is located in countries dissimilar to the United States. Our study thus connects to extant COO literature in several ways: First, we attribute the price variation to a "stereotype" effect rather than an effect rooted in objective (tangible or intangible) attributes. Second, to test and measure the seller's COO premium, we use buyer product evaluations, measured as the *actual* prices paid in auctions and posted price transactions. Third, our findings enrich limited empirical evidence about COO effects across product categories.

The connection between behavioral studies pertaining to the underpinning of the mechanism of COO and its real-world influence on pricing, however, remains insufficiently researched empirically. Therefore, in this analysis, we attempt to tease out the potential reasons

that might explain price dispersion within homogeneous products and identify whether an equity-based price premium due to the retailer's COO exists in international trades. Moreover, we use real-world data to examine a few interesting findings about the COO premium gathered through different data collection processes. Specifically, recent cultural research by Gürhan-Canli and Maheswaran (2000) indicates that Japanese and American respondents both prefer products from their home countries. Cordell (1991) suggests that developing countries may be less favored than developed countries when it comes to COO. Also, instead of studying production origins, such as "Made in ____" labels on a product (e.g., Ettenson, Wagner, and Gaeth 1988; Gaedeke 1973), we focus on the origins of the *retailer* (e.g., a U.S. retailer may sell a product with the same country of production as a Hong Kong-based retailer). Finally, instead of relying on controlled experimental environment, surveys, or printed list prices (e.g., Agrawal and Kamakura 1999), our analyses are based on real transaction data.

EMPIRICAL ANALYSIS AND RESULTS

Data

We extract our study data in November 2007 from eBay's Web site, which includes publicly available transaction information, such as product price, shipping cost, auction bidding process, and so forth. The data employed herein comprise the price record of four products/services: Sony memory sticks (N = 608), iPod Nanos (N = 360), WoW gold strategies (N = 480), and mobile phone unlocking services (N = 119). In selecting these products, in addition to ensuring their homogeneity, we must confirm that each product category is sold by sellers from different origins. For the product categories, we observe extensive cross-country sales (Table 1), which makes them good product categories for our study. Specifically, Sony memory sticks on the eBay U.S. market are sold by sellers from Canada, China, Hong Kong, the United Kingdom, and the United States; iPod Nanos on the eBay U.K. market are sold by sellers

from Canada, Hong Kong, Singapore, the United Kingdom, and the United States; WoW gold strategies are sold by sellers from Australia, Canada, the United Kingdom, and the United States; and the phone unlocking services are sold by sellers from Australia, Canada, the United Kingdom, and the United States.³ In contrast, many products on the U.S. eBay market, such as Sony's PlayStation Portables, are sold almost exclusively by American sellers, which makes them unsuitable for a seller COO study. For digitally delivered intangible products, such as WoW gold strategies or mobile phone unlocking services, eBay provides common product listings across all eBay market countries.

By comparing Sony memory sticks in the U.S. and iPod Nanos in the U.K. markets, we examine the consistency of our conclusions across different countries and with different monetary values. Products or services of a digital nature also enable us to confirm the robustness of our findings related to tangible products, such as the memory sticks or iPod Nanos. By analyzing their transaction prices, we can determine whether price dispersion persists without addressing physical shipping or delays in delivery due to the sellers' COOs.

The prices vary significantly for sellers with different COOs (Table 1). For example, sellers of four-gigabyte Sony memory sticks from the United States sell for an average price (including product price and shipping cost) of \$42.51, higher than their counterparts from China (\$38.41) or Hong Kong (\$39.15). Canadian sellers' average price for the same product (\$51.44), however, is higher. Therefore, the observed price dispersion is not fully consistent with the home-country effect (e.g., Canadians prefer products from Canada, while Americans prefer products from the United States) observed by Gürhan-Canli and Maheswaran (2000).

[INSERT TABLE 1 HERE]

Empirical Analysis

³ We drop five transactions from a seller in India from the data set because of the small sample size.

The existence of price dispersion for homogenous goods across countries leads us to consider whether such the seller COO effect on product prices persists after we account for factors that may vary across different transactions.

A major factor that we need to control for is trading risk. Buyers may take more risk by purchasing from a foreign retailer, but the level of risk can be controlled for by noting the eBay seller's feedback score. As a measure of reputation, we use the feedback score as a proxy that indicates the level of risk and the reliability or truthfulness of each retailer in each transaction (e.g., Melnik and Alm 2002; Park and Bradlow 2005). That is, we quantify the level of risk and control for it to tease out the pure price premium that results from the retailers' COOs. As our reviews of economic and behavioral theories suggest, such premiums likely indicate a COO-based equity effect.

Following the tradition of price dispersion literature (e.g., Milyo and Waldfogel 1999; Sorensen 2000), we use transaction prices (including product price and shipping costs)⁴ as the dependent variable. The other available information, which serves as independent variables, can be categorized as product information (e.g., capacity for Sony memory sticks or iPod Nano), auction variables (e.g., price format,⁵ minimum bidding amount, number of bidders), seller information (e.g., seller countries, feedback ratings), and buyer information (e.g., buyer countries, feedback ratings). We provide a list of the variable definitions in Table 2.

[INSERT TABLE 2 HERE]

Study 1: Sony Memory Sticks

⁴ We conduct the same analyses using product price alone (i.e., excluding shipping costs) as the dependent variable. The results do not change substantively.

⁵ eBay's products usually sell through three price formats: pure auctions, buy-it-now auctions (i.e., allowing the bidder to end an auction prematurely at a fixed price), and fixed price.

We propose a random-effects model and estimate it using a Bayesian method. This approach offers three advantages over a frequentist approach (e.g., ordinary least squares). First, it allows us to control for the remaining heterogeneity in retailers' COO due to unobserved factors. Second, the Bayesian method alleviates the missing data problem in estimation. For example, if the buyer's country and feedback information is missing, we can set prior distributions for the variables with missing values (*BuyerAU*, *BuyerCA*, *BuyerSP*, *BuyerUS*, and *bsSame*) in the Bayesian approach without losing observations. Third, the distribution form of the parameter estimates captures uncertainty, such as that due to small sample size.

In the Bayesian framework, the price of a transaction i , Y_i , follows a normal distribution with mean μ_i and common variance σ^2 :

$$Y_i \sim N(\mu_i, \sigma^2),$$

and the mean μ_i is a linear function of the independent variables:

$$(1) \quad \begin{aligned} \mu_i = & \beta_0 + \beta_1 \cdot AUC_i + \beta_2 \cdot mBID_i \cdot I_i(AUC) + \beta_3 \cdot nBIDs_i \cdot I_i(AUC) + \beta_4 \cdot DURA_i \cdot I_i(AUC) \\ & + \beta_5 \cdot SellerFB_i + \beta_6 \cdot SellerPos_i + \beta_7 \cdot GB2_i + \beta_8 \cdot GB4_i + \beta_9 \cdot BuyerFB_i + \beta_{10} \cdot BuyerAU_i \\ & + \beta_{10} \cdot BuyerCA_i + \beta_{12} \cdot BuyerSP_i + \beta_{13} \cdot BuyerUS_i + \beta_{14} \cdot bsSame_i + \alpha_{i1} \cdot SellerCA \\ & + \alpha_{i2} \cdot SellerCN_i + \alpha_{i3} \cdot SellerHK_i + \alpha_{i4} \cdot SellerUK_i \end{aligned}$$

where $I_i(AUC)$ ($= AUC_i$) is an indicator variable for transaction i with an auction price format (vs. fixed price). In addition, β_k ($k = 0, 1, \dots, 14$) are uninformative Normal distribution priors $N(0, 0.01)$. Note that α_{ij} ($\forall i$, and $j = 1, 2, 3, 4$) are transaction specific and allow for retailer country-specific unobserved heterogeneity. We specify a random effects model such that $\alpha_{ij} \sim N(\bar{\alpha}_j, \sigma_{\alpha_j}^2)$

and assign uninformative priors to $\bar{\alpha}_j$ and $\sigma_{\alpha_j}^2$, such that $\bar{\alpha}_j \sim N(0, 0.01)$, and

$\sigma_{\alpha_j}^2 \sim inv - gamma(0.01, 0.01)$. Of the 25,000 total draws we obtain from a Gibbs sampler, the first 20,000 serve as burn-ins, and the posterior estimates are based on the last 5,000 draws. We use the 95% posterior confidence interval to judge the statistical significance and deem a variable

significant at $p = 0.05$ if the interval between the 2.5% and 97.5% percentile of the posterior estimates does not cover 0. We also report the pseudo- R^2 , which captures the percentage of variance captured by the non-random component of the model.

The posterior mean and standard deviations of the coefficients (β_k , $k = 0, 1, \dots, 14$ and $\bar{\alpha}_j$, $j = 1, 2, 3, 4$) appear in Table 3. The result demonstrates a very strong sellers' COO effect. Compared with sellers from the United States as the base level, the transaction prices for sellers from China (mean = -5.02, $p < 0.05$), Hong Kong (mean = -3.27, $p < 0.05$), and the United Kingdom (mean = -9.10, $p < 0.05$) are significantly lower. The regression result also indicates that such price dispersion is not caused by a home-country effect, because the parameter for *bsSame* is statistically insignificant. All else being equal, sellers from China or Hong Kong on average earn roughly \$5 and \$3 less than U.S. sellers, respectively, or an almost 10% price discount. The unobserved heterogeneity measure in the seller's COO differs across countries. The random variance for *SellerCA*, *SellerCN*, *SellerHK*, and *SellerUK* are 11.46, 0.17, 0.81, and 0.74, respectively. These estimates reflect the additional COO-specific variances that are not captured by the model (including the overall variance σ^2). The result therefore suggests high unobserved heterogeneity in pricing among the sellers from Canada. Variations in unobserved heterogeneity occur in the other product categories as well.

With regard to the control variables, we find an interesting result, in that U.S. buyers (N = 302) tend to be able to buy products at lower prices than do buyers from Canada, Spain, and Australia. However, the price paid does not statistically differ from the baseline priced paid by "other countries" (i.e., 26 countries that collectively account for 210 of the 608 total samples). To draw conclusions about buyers' COO effects, we would need to measure the seller's willingness to sell to buyers from different countries. But in eBay's market structure, buyers

choose sellers, not vice versa. In no scenario can a seller decide the price at which to sell to a buyer from a specific country. Therefore, the control variable results for the buyer prices merely reflect price variations among buyers.⁶

The sellers' percentage of positive ratings (*SellerPos*), which measures the transaction-level risk and reliability of the sellers, is significant (mean = 0.38, $p < 0.05$); that is, better feedback leads to price premiums for the seller. Every 10% increase in positive ratings leads to an additional \$3.80 as a price premium. The other seller characteristic, seller's total feedback (*sellerFB*), does not have a significant effect on the final transaction price. On the buyer side, buyers from Australia, Canada, and Spain pay more than others, but buyer feedback ratings do not influence the purchase price significantly. In addition, the auction design variables, such as minimum bidding amount (*mBID*), number of bids (*nBIDS*), and transaction duration (*DURA*), all have positive and significant influences on the ultimate transaction price, consistent with previous research on Internet auctions (e.g., Park and Bradlow 2005). Compared with direct purchases, an auction pricing format (*AUC*) leads to lower prices. Finally, we find that higher capacity (4 and 8 gigabytes) models attain significantly higher prices.

[INSERT TABLE 3 HERE]

The cost structure of certain Asian countries or regions may differ from that of North America;⁷ as a result, a retailer may set a lower asking price, which would lead to a lower transaction price. To explore this possibility, we use gross domestic product (GDP) as a general measure of the cost structure for the seller's COO. According to the Central Intelligence Agency's World Factbook (<http://www.cia.gov/>), in 2007, the GDP per capita (or purchasing

⁶ We thank an anonymous reviewer for pointing out this issue.

⁷ To determine if sellers have a different willingness to accept (WTA) because of different cost structures, we perform an ANOVA test of the mean of WTA (measured by minimum bid plus shipping cost specified by the seller) across countries. The test fails to reject the null hypotheses that the WTA is the same across countries. We thank an anonymous reviewer for this suggestion.

power parity, PPP) of the seller countries are as follows: Canada \$38,400; China \$5,300; Hong Kong \$42,000; United Kingdom \$35,100; and United States \$45,800. The correlation between the GDP and our estimate of the COO effect is not statistically significant (0.38, $p = 0.53$).⁸ The same statistically insignificant relationship between PPP and the COO premium also applies to the other three product categories we study. Thus, a cost structure based on the PPP or GDP cannot explain the COO price premium. Therefore, we do not find statistically significant results for Cordell's (1991) conclusions that the COO premium favors developed countries.

Study 2: iPod Nano

In Study 2, we confirm the robustness of the COO premium results from Study 1 with a different product and different market (iPod Nano at eBay United Kingdom). Study 2 also serves to assess whether shipping delays from a foreign country could interfere with the COO effects. The empirical analysis is similar to Study 1, with slightly different control variables.

We find significant COO discounts for Canada (mean = -13.36), Hong Kong (mean = -7.28), Singapore (mean = -7.81), and the United Kingdom (-9.74). Because U.S. sellers command the highest prices for iPod Nanos on eBay U.K., neither home country nor shipping delays can explain the COO premium effect in Study 2. On the flipside, as a U.S. brand, the product's home location may explain the price premium for iPod Nano among U.S. sellers, but it cannot account for the results related to Sony memory sticks in Study 1. Therefore, the results of Studies 1 and 2 combine to indicate a COO price premium for the United States and discounts for all other locations, which cannot be explained by the home country effect or shipping delays.

Among the control variables, the seller characteristics (*AUC*, *mBID*, *nBIDS*, and *DURA*) yield very similar results to those we find in Study 1. Because buyers on the eBay UK site are

⁸ We cannot include GDP variables in our model because of collinearity with the seller country dummy variables.

predominantly domestic (95%), we include only one dummy variable (*BuyerUK*) to control for buyer location, which turns out to be insignificant. An additional interesting finding shows that when we control for product capacity, the second and third generations of iPod Nanos sell for very similar prices ($Gen2 = -0.15$, not significant), which suggests that consumers are not willing to pay much more for an update of the iPod Nano between these generations.

Study 3: World of Warcraft Gold Strategy and Phone Unlocking Service

To investigate the COO price premium we have identified, we conduct similar analyses of digital products/services sold on eBay's international marketplaces. Because such products or services can be delivered or fulfilled over the Internet, we can remove the potential confounding factors in COO price premiums due to different shipping times or delays in delivery. The analysis remains the same as that presented in Study 1, with slightly different product control variables. We drop the minimum bidding amount (*mBID*) and the number of bids (*nBIDS*) variables from the analysis, because their high correlation with auction pricing (*AUC*) could lead to singular independent variable matrices.

Consistent with Studies 1 and 2, we find significantly lower prices when the seller origins are not the United States (except Canada). For WoW gold strategies, sellers from Australia (mean = -1.62 , $p < 0.05$), Canada (mean = -4.52 , $p < 0.05$), and the United Kingdom (mean = -3.72 , $p < 0.05$) all experience significantly lower transaction prices. For phone unlocking services, the prices of sellers from Canada (mean = 3.04 , $p < 0.05$) are higher than those from the United States; however, sellers from Australia (mean = -5.71 , $p < 0.05$) and the United Kingdom (mean = -5.84 , $p < 0.05$) both have significantly lower prices.

Overall, the evidence from four product categories in different eBay markets strongly suggests a price premium for sellers of United States. A small variation in the relative COO premium rankings across product categories remains, consistent with previous literature (e.g.,

Nagashima 1970; Okechuku 1994; Roth and Romeo 1992) that indicates COO effects are product specific and vary across countries. Agarwal and Sikri (1996) also show that the transference of COO effects across product categories depends on the similarity between the products.

CONCLUSION

As a result of globalization during recent years, outsourcing of both tangible products and intangible services has made geographically separate countries more economically connected than ever before. It is not simply *an* option to embrace globalization and expand to a free international market these days; it is *the* option. From a government's or regulator's point of view, the position of causing a "COO discount" is problematic. Everything else being equal, these exporting countries are punished by their low COO equity.

However, the inefficiency caused by COO bias also poses an arbitrage opportunity for potential retailers in countries (or markets) that command a COO premium. Retailers in places with COO discounts should establish intermediaries that can provide the COO premium. With an intermediary incurring a cost below the price premium, the gain would result in profitable arbitraging. Furthermore, because the United States (and, to some extent, Canada) is the only country that enjoys a seller COO premium, it makes sense for vendors to use U.S. registered companies or retailers to sell products. For the iPod Nano study, selling as a U.S.-registered seller would increase the transaction price by an average of between 7.28 and 13.36 pounds (GBP), all else being equal. This significant increase in profit margin demands very little cost, at least in the market scenario provided by eBay.

We do not find strong evidence of a negative spillover effect from large-scale product recalls (Munoz, 2007; Spencer and Casey, 2007), which occurred not long before the data collection. In the eBay U.S. market, the transaction prices for Sony memory sticks for sellers

from Hong Kong or China are not significantly lower than those from the United Kingdom, and in the eBay U.K. market, Asian sellers' prices are not lower than those of local sellers.

Similar to the notion of equity premiums in financial markets (Benartzi and Thaler 1995; Siegel and Thaler 1997), the retailer COO premium suggests bounded rationality in global trade. Overly risk-averse buyers hurt the company's bottom line. In many product categories, unlike toys or food, the intangible risk is very limited. Therefore, buyers must be discriminating about the actual kind and level of risk incurred, instead of allowing COO bias to influence their purchasing decisions or willingness to pay.

In this study, we examine only a limited number of product categories and countries. A more generalized methodology to assess the retailer COO premiums for less homogenous product categories (e.g., collectibles) would provide more insights into how global consumers perceive retailers from various countries. Additional studies that focus on cross-category retailer COO premium also could draw a more comprehensive map of such effects in international trade. Finally, it would be interesting to quantify the vendor COO effect empirically in organizational buying, because it may differ from the consumer buying scenario we investigate herein (Wagner, Ettenson, and Parrish 1989).

REFERENCES

- Agrawal, Jagdish and Wagner A. Kamakura (1999), "Country of Origin: A Competitive Advantage?" *International Journal of Research in Marketing*, 16, 255–267
- Agarwal, Sanjeev. and Sameer Sikri (1996), "Country Image: Consumer Evaluation of Product Category Extensions," *International Marketing Review*, 13 (4), 23-39.
- Anderson, James E. (1985), "The Relative Inefficiency of Quotas: The Cheese Case," *American Economic Review*, 75 (1), 178-190.
- and Eric van Wincoop (2004), "Trade Costs," *Journal of Economic Literature*, 42 (3), 691-751.
- Baldwin, Robert E. (1948), "Equilibrium in International Trade: A Diagrammatic Analysis," *Quarterly Journal of Economics*, 62 (5), 748-762.
- Benartzi, Shlomo, and Richard H. Thaler (1995), "Myopic Loss Aversion and the Equity Premium Puzzle," *Quarterly Journal of Economics*, 110 (1), 73-92.
- Bilkey, Warren J., and Erik Nes (1982), "Country-of-Origin Effects on Product Evaluations," *Journal of International Business Studies*, 13 (1), 89-99.
- Bond, Eric W. (1984), "International Trade with Uncertain Product Quality," *Southern Economic Journal*, 51 (1), 196-207.
- Cordell, Victor V. (1991), "Competitive Context and Price as Moderators of Country of Origin Preferences", *Journal of Academy of Marketing Science*, 19 (2), 123-128.
- Erickson, Gary M., Johny K. Johansson, and Paul Chao (1984), "Image Variables in Multi-attitude Product Evaluations: Country-of-Origin Effects," *Journal of Consumer Research*, 11(2). 694-699.

Ettenson, Richard, Janet Wagner, and Gary Gaeth (1988), "Evaluating the Effect of Country of Origin and the 'Made in the USA' Campaign: A Conjoint Approach," *Journal of Retailing*, 64 (1), 85-100.

Gaedeke, Ralph (1973), "Consumer attitudes Toward Products 'Made In' Developing Countries," *Journal of Retailing*, 49 (2), 13-24.

Gürhan-Canli, Zeynep and Durairaj Maheswaran (2000), "Cultural Variations in Country of Origin Effects," *Journal of Marketing Research*, 37 (3), 309-317.

Han, C. Min (1989), "Country Image: Halo or Summary Construct?" *Journal of Marketing Research*, 26 (2), 222-229.

Isard, Peter (1977), "How Far Can We Push the 'Law of One Price'?" *American Economic Review*, 67 (5), 942-948.

Keller, Kevin L. (1993), "Conceptualizing, Measuring, and Managing Customer-Based Brand Equity," *Journal of Marketing*, 57 (1), 1-22.

Kreinin, Mordechai E. (1961), "Effect of Tariff Changes on the Prices and Volume of Imports," *American Economic Review*, 51 (3), 310-324.

Maheswaran, Durairaj (1994), "Country of Origin as a Stereotype: Effects of Consumer Expertise and Attribute Strength on Product Evaluations," *Journal of Consumer Research*, 21 (2), 354-365.

Melnik, Mikhail I. and James Alm (2002), "Does a Seller's E-Commerce Reputation Evidence from eBay Auctions," *Journal of Industrial Economics*, 50 (3), 337-350.

Milyo, Jeffrey and Joel Waldfogel (1999), "The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart," *American Economic Review*, 89 (5), 1081-1096.

Munoz, Sara Schaffer (2007), "Lead Concerns Spread to More Products," *Wall Street Journal*, September 18, D1.

- Nagashima, A. (1970), "A Comparison of Japanese and US Attitudes toward Foreign Products", *Journal of Marketing*, 34 (January), 68-74.
- Okechuku, Chike (1994), "The Importance of Product Country of Origin: A Conjoint Analysis of the United States, Canada, Germany and The Netherlands," *European Journal of Marketing*, 28 (4), 5-19.
- Park, Young-Hoon and Eric T. Bradlow (2005), "An Integrated Model for Bidding Behavior in Internet Auction: Whether, Who, When and How Much," *Journal of Marketing Research*, 42 (November), 470-482.
- Roggeveen, Anne L., Neeraj Bharadwaj, and Wayne D Hoyer (2007), "How call center location impacts expectations of service from reputable versus lesser known firms," *Journal of Retailing*, 83 (4), 403-410.
- Roth, Martin S. and Jean Romeo (1992), "Matching Product Category and Country Image Perceptions: A Framework for Managing Country-Of-Origin Effects," *Journal of International Business Studies*, 23 (3), 477 – 497.
- Siegel, Jeremy, and Richard H. Thaler (1997), "Anomalies: The Equity Premium Puzzle," *Journal of Economic Perspectives*, 11 (1), 191-200.
- Salop, Steven, and Joseph Stiglitz (1977), "Bargains and Ripoffs: A Model of Monopolistically Competitive Price Dispersion," *Review of Economic Studies* 44, 493-510.
- Shapiro, Carl (1982), "Consumer Information, Product Quality, and Seller Reputation," *Bell Journal of Economics* 13, 20-35.
- Sorensen, Alan T. (2000), "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," *Journal of Political Economy*, 108 (4), 833-850.
- Spencer, Jane, and Nicholas Casey (2007), "Toy Recall Shows Challenge China Poses to Partners," *Wall Street Journal*, August 2, 2007: A3.

Stigler, George J. (1961), "The Economics of Information," *Journal of Political Economy*, 69 (3), 213-225.

Varian, Hal R. (1980), "A Model of Sales," *American Economic Review*, 70 (4), 651-659.

Wagner, Janet, Richard Ettenson, and Jean Parrish (1989), "Vendor Selection among Retail Buyers: An Analysis by Merchandise Division," *Journal of Retailing*, 65 (1), 58-79.

Table 1
Cross-Country Sales

Product/Service	Seller Origin	Average Price	Std. Deviation of Price	# of Unique Sellers	# of Items Sold
SONY Memory Stick (US Dollar)	Canada	48.76	28.28	6	6
	China	32.32	6.25	22	141
	Hong Kong	46.55	20.56	18	233
	United Kingdom	37.93	0.48	1	21
	United States	41.29	20.74	58	207
iPod Nano (GB Pound)	Canada	80.52	7.40	1	13
	Hong Kong	91.87	13.57	4	33
	Singapore	94.64	12.98	2	15
	United Kingdom	97.13	19.66	183	290
	United States	121.63	6.15	3	10
WoW Gold Strategy (US Dollar)	Australia	7.02	1.20	3	7
	Canada	4.99	0.00	1	19
	United Kingdom	4.95	0.00	1	14
	United States	8.63	2.87	23	440
Phone Unlocking (US Dollar)	Australia	7.37	1.63	3	8
	Canada	17.09	1.72	4	22
	United Kingdom	5.06	7.11	4	35
	United States	11.60	5.85	12	54

Table 2
List of Independent Variables

Variable Name	Explanation
<i>AUC</i> *	Dummy variable for price format: Auction (base level: direct purchase), = 1 if the transaction has auction price format, 0 otherwise.
<i>mBID</i>	Minimum bidding amount (only applies to <i>AUC</i>)
<i>nBIDS</i>	Total number of bids submitted (only applies to <i>AUC</i>)
<i>DURA</i>	Auction duration (only applies to <i>AUC</i>)
<i>SellerXX</i> and <i>BuyerXX</i>	Dummy variables for seller and buyer origins respectively. = 1 if the seller in the transaction has origin XX, 0 otherwise. XX = AU for Australia XX = CA for Canada XX = CN for China XX = HK for Hong Kong XX = SG for Singapore XX = SP for Spain XX = UK for United Kingdom XX = US for United States The based level of <i>SellerXX</i> is the US; the base level of <i>BuyerXX</i> is “Other Countries”.
<i>SellerFB</i>	Seller’s total feedback score; this variable measures the seller’s experience
<i>SellerPos</i>	Seller’s % of positive ratings; this variable measures the level of risk in each transaction. That is, the perceived transaction risk should be seller specific, such that the higher percentage of positive feedbacks a seller receives, the lower the risk there is in the transaction.
<i>BuyerFB</i>	Buyer’s total feedback score; this variable measures the buyer’s experience
<i>bsSame</i>	Dummy variable for whether the buyer and the seller have the same country of origin.
<i>Gold</i>	Dummy variable for WoW gold strategy, = 1 if the strategy is explicitly described as a “gold” strategy
<i>Gen1, Gen2, Gen3</i>	Dummy variable for the generation of iPod Nano: 1 st or 2 nd = 1 if the product is 1 st or 2 nd generation iPod Nano, 0 otherwise. (base: 3 rd generation)
<i>GB1, GB2, GB4</i>	Dummy variable for SONY memory stick or iPod Nano capacity: 1, 2, 4GB, = 1 if the capacity of the product is 1, 2, or 4 gigabytes, 0 otherwise. (base level: 2GB for SONY memory sticks, 8GB for iPod Nano).

* We drop the subscript *i* in Table 2 to increase readability.

Table 3 Study Results

Variable	SONY Memory Sticks	Apple iPod Nano	World of Warcraft	Phone Unlocking
	(Study 1)	(United Kingdom)	Gold Strategy	Service
	(Study 1)	(Study 2)	(Study 3)	(Study 3)
	Estimate	Estimate	Estimate	Estimate
Intercept	-10.87 (6.61)	30.02 (8.68) **	-45.23 ** (2.06)	-1.19 (8.80)
<i>AUC</i>	-10.06 (0.94) **	-14.18 (3.11) **	-8.21 (1.07) **	-0.17 (3.00)
<i>mBID</i>	0.24 (0.03) **	0.12 (0.04) **	— #	— #
<i>nBIDS</i>	0.33 (0.07) **	0.83 (0.14) **	0.35 (0.52)	— #
<i>DURA</i>	0.76 (0.13) **	0.55 (0.25) **	0.10 (0.05) **	0.72 (0.26) **
<i>SellerFB</i>	-3.12E-06 (1.48E-05)	8.02E-5 (4.57E-4)	3.90E-4 ** (1.13E-4)	8.69E-4 ** (1.86E-4)
<i>SellerPos</i>	0.38 (0.07) **	-0.06 (0.39)	0.62 (0.02) **	0.04 (0.09)
<i>Gen1</i>	—	-5.21 (2.27) **	—	—
<i>Gen2</i>	—	-0.15 (1.98)	—	—
<i>GB1</i>	—	-66.52 (8.73) **	—	—
<i>GB2</i>	—	-28.60 (2.16) **	—	—
<i>GB4</i>	14.84 (0.61) **	-19.71 (1.88) **	—	—
<i>GB8</i>	58.38 (0.93) **	—	—	—
<i>Gold</i>	—	—	-8.81 (0.77) **	—
<i>BuyerFB</i>	1.87E-5 (5.28E-4)	4.34E-3 ** (1.87E-3)	-2.92E-4 (4.19E-4)	0.02 (0.01)
<i>BuyerAU</i>	5.33 (1.06) **	—	—	—
<i>BuyerCA</i>	3.41 (1.28) **	—	—	—
<i>BuyerSP</i>	5.08 (1.85) **	—	—	—
<i>BuyerUK</i>	—	2.16 (2.24)	—	—
<i>BuyerUS</i>	0.64 (0.79)	—	—	—
<i>bsSame</i>	-0.52 (1.09)	—	—	—
<i>SellerAU</i>	—	—	-1.62 (0.85) **	-5.71 (1.75) **
<i>SellerCA</i>	-0.13 (2.74)	-13.36 (3.01) **	-4.52 (0.50) **	3.04 (1.11) **
<i>SellerCN</i>	-5.02 (0.92) **	—	—	—
<i>SellerHK</i>	-3.27 (1.08) **	-7.28 (1.48) **	—	—
<i>SellerSG</i>	—	-7.81 (2.54) **	—	—
<i>SellerUK</i>	-9.10 (1.62) **	-9.74 (2.22) **	-3.72 (0.60) **	-5.84 (1.46) **
N	608	360	480	119
pseudo-R ²	0.91	0.61	0.48	0.57

Notes: Dependent variable: Transaction price *Y* (US dollars for Studies 1 and 3, Great Britain pounds for Study 2). Standard deviations are in parentheses.

** Significant at $p = 0.05$, indicating the interval between the 2.5% and 97.5% percentile of the posterior estimates does not cover 0.

Dropped from analysis because of singularity.