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What Makes Consumers Willing to Pay a Price Premium for National Brands over Private Labels?

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ABSTRACT

The growing sales of private labels pose significant challenges for national brands around the world. A major question is whether consumers continue to be willing to pay a price premium for national brands over private labels. Using consumer survey data from 22,623 respondents from 23 countries in Asia, Europe, and the Americas across on average 63 CPG categories per country, this paper studies how marketing and manufacturing factors affect the price premium a consumer is willing to pay for a national brand over and above a private label. These effects are mediated by consumer perceptions of quality of national brands vis-à-vis private labels. While our results do not bode well for national brands in the sense that willingness to pay decreases as private labels mature, we offer several managerial recommendations to buck this trend. In countries where private labels are more mature, the route to success is to go back to manufacturing basics. In private-label development countries, there is a stronger role for marketing to enhance the willingness to pay for national brands.

Key words: Willingness to Pay, Quality Gap, Cross-Continent Survey, Consumer Packaged Goods, Marketing Mix effects

The growing sales of private labels (PLs) pose significant challenges for national brands (NBs) around the world. A global study conducted by ACNielsen (2005) revealed that the growth in PL market share outpaced that of NBs in three-quarters of the consumer packaged goods (CPG) categories studied. In the U.S. alone, in each year of the last decade (1998-2008), PLs grew faster than NBs. In the light of the current economic recession, the future looks even bleaker. Lamey et al. (2007) show that PL share increases when the economy is suffering, and shrinks when the economy is flourishing. However, consumers switch more extensively to PLs during an economic downturn than they switch back to NBs in a subsequent recovery, permanently boosting PL share over a succession of business cycles.

To offset their sliding sales volumes, many NB manufacturers have started increasing their price premiums over PLs. For example, Unilever has recently been increasing prices at record rates to compensate a 2.4 percent drop in European sales volumes (*Financial Times* 2009). Similarly, Kellogg, General Mills, and Heinz have implemented strong pricing increases in an attempt to retain or grow their profits despite drops in sales volumes attributable to PLs (Facenda 2008). Unfortunately, the pricing window that opened for many CPG firms before the current Great Recession seems to be closing, leaving companies in a bind. Instead of compensating for falling sales volumes, “boosting prices further could drive consumers to buy even more private-label goods; reducing the companies’ sales volume and squeezing their profit margins at the factory level by raising the cost of production per unit” (*Wall Street Journal* 2009, p. B1).

Although academic research has provided useful insights to combat increasing PL sales, several gaps in our understanding have yet to be addressed. First, there is a dearth of research on whether and when consumers continue to be willing to pay a price premium for NBs over PLs (see Sethuraman and Cole 1999 for an exception). This is remarkable as the ability of NBs to charge a price premium has a strong impact on profitability (cf. Marn, Roegner, and Zawada

2003). Second, whereas there has been a lot of research into the consumer-side factors driving PL success (e.g., Ailawadi, Neslin, and Gedenk 2001; Erdem, Zhao, and Valenzuela 2004), supply-side factors, in particular marketing and manufacturing, have received far less attention (see Dhar and Hoch 1997 and Hoch 1996 for two exceptions). Third, almost all of the existing body of research has been conducted in countries where PLs are highly developed. Although it is reasonable that researchers first focus on these markets to understand how NBs can fight PLs, it is paramount that we conduct more research in countries with a more recent PL history. Since the economic and marketing environments of these countries are quite different from those of more developed PL-countries, the best ways to fight PLs may also differ.

The purpose of this study is to advance our understanding of what drives consumers' willingness to pay a price premium for NBs over PLs (WTP, for short). We accomplish this in two ways. First, we specify effects of marketing and manufacturing factors on consumers' WTP, and posit that these effects are mediated by consumer perceptions of quality of NBs vis-à-vis PLs. Second, we explore the possibility that the efficacy of these marketing and manufacturing factors in fostering WTP depends on the stage of PL development a country is in. We estimate our model with dedicated consumer survey data from 22,623 respondents from 23 countries in Asia, Europe, and the Americas across on average 63 CPG categories per country.

CONCEPTUAL MODERATED-MEDIATION FRAMEWORK OF DRIVERS OF WTP

Our conceptual moderated-mediation framework considers the effects of marketing and manufacturing factors on the price premium a consumer is willing to pay for a NB over a PL. We posit that the effect of these factors on WTP is mediated by consumer perceptions of quality of NBs vis-à-vis PLs. We expect that the effect of the quality gap on WTP is systematically moderated by two consumer factors: the consumer's involvement with the category and the consumer's beliefs about the extent to which quality and price are related (price-quality schema).

While involvement is a major *general* moderator of consumer decision processes (Assael 1998; Celsi and Olson 1988), price-quality schema is a key *price-context-specific* moderator, only implicated in price judgments related to perceived quality (Lichtenstein, Bloch, and Black 1988).

Our model further includes the stage a country is in with respect to the PL life cycle. The PL environment in a number of countries can be considered as mature, in that PLs have had a major presence for many decades. In other countries, PLs are in the development stage, with PLs being a much more recent phenomenon. Since PLs require extensive learning, both by retailers and consumers, we may expect systematic differences between countries that are in the PL-Development versus PL-Maturity stage.

Figure 1 presents our moderated-mediation framework of drivers of WTP. The conceptual rationale for the direction of the expected effects is discussed subsequently.

--- Figure 1 about here ---

Marketing Drivers of Perceived Quality Gap

Product innovation. Introducing new and improved products underpins the quality gap between NBs and PLs. Retailers have to manage many product categories, and consequently lack the technical and financial resources to be innovation leaders. PLs overwhelmingly play a catch-up game, trying to copy the innovations introduced by NBs (Kumar and Steenkamp 2007). In some categories, the catch-up game is difficult to pull off because NBs actively compete by way of continuous and expensive investments in technical innovation. This puts PLs continuously at a distance, and consequently, comparative quality of PLs in these categories will be lower. On the other hand, if NBs fail to innovate, they lose the quality edge that they typically have, because it allows PLs to catch up.

Distinctive packaging. NBs not only try to increase the perceived quality gap through product innovation but also by distinctive packaging, a second essential element of a NB

manufacturer's product strategy. Packaging plays a crucial role in consumers' perceptions of NBs and PLs due to 1) the large number of SKUs in any retail store, 2) shelf layout where competing SKUs are positioned next to each other, combined with 3) the limited amount of time consumers spend on each purchase decision (Kapferer 1995).

To understand the important role packaging plays in shaping the perceived quality gap, we turn to perception theory. Two consumer characteristics are important in determining consumers' perceptions of stimuli: the propensity to generalize from one stimulus to another (i.e., to generalize from NBs to PLs) and the ability to discriminate between stimuli (i.e., to discriminate between NBs and PLs) (Assael 1998, pp. 211-217). If the packaging of the PL is similar to that of a NB, stimulus *generalization* is likely. The consumer will put the NB and the PL in the same perceptual category and will be prone to generalize perceived quality from the NB to the PL. On the other hand, if NBs have packaging that is distinctive from the packaging of PLs, stimulus *discrimination* is more likely. In this case, the consumer is more likely to perceive a quality gap between NBs and PLs. Realizing the importance of these perceptual processes, NBs make a consistent effort to render their products' look and feel as distinct as possible from PLs, while PLs try to copy the packaging of NBs. It is thus not surprising that copycatting is an important area of conflict between NB manufacturers and retailers (Kapferer 1995).

Advertising. In a seminal paper, Klein and Leffler (1981) derive analytically that, once repeat purchases are taken into account, consumers can successfully use advertising intensity as an indicator of quality. Kirmani and Wright (1989) provide empirical evidence for this notion, showing that consumers indeed use high advertising expenditure as a clue to the marketer's confidence in the product quality. Although some retailers have started to advertise their PLs, retailers typically cannot match the advertising intensity of NBs. Brand manufacturers have a greater stake in their categories than retailers do, as retailers have to manage and support

hundreds of categories (Hoch and Banerji 1993). Thus, consumers are more likely to perceive a quality gap between NBs and PLs in categories in which national brands are heavily advertised.

Price promotion. The final marketing mix weapon considered is price promotion. Whereas advertising serves to differentiate product alternatives in a category, price promotions teach consumers to focus on price and reduce differentiation between product alternatives (Boulding, Lee, and Staelin 1994). Heavy price promotions cause product alternatives to be increasingly seen as commodities purchased on price, with their distinctiveness subsequently diminished (Mela, Gupta, and Jedidi 1998). Thus, we expect that heavy price promotions in a category are associated with smaller perceived quality differences between NBs and PLs.

Manufacturing Drivers of Perceived Quality Gap

PL production by NB manufacturers. Despite the progress in PL quality over the last decades, there is still considerably more uncertainty about PL quality than about NB quality. Consumers realize that retailers usually do not manufacture their own PLs. In fact, in the U.S. alone, it has been estimated that over half of the NB manufacturers also engage in PL production. Consumer magazines and anecdotal wisdom regularly suggest that “all products come from the same factory.” For example, consider a recent statement in *Consumer Reports* (2009, p. 16) that “Many big-name companies make their usual types of products for the stores.” Indeed, well-known companies like Alcoa, Bausch & Lomb, Del Monte, McCormick, and Heinz all engage in PL manufacturing (Kumar and Steenkamp 2007). To the extent that consumers indeed believe that NB manufacturers produce PLs, the perceived quality gap between NBs and PLs is reduced.

Difficulty of producing the product. On the other hand, consumers have no guarantee that the PL is indeed produced by a reputable NB manufacturer, as NB manufacturers are typically secretive about PL manufacturing lest it reduces the equity of their own brands. This is an important issue for categories where manufacturing sophistication is high. If consumers perceive

that the product is difficult to make, this calls PL quality into question, as consumers will not know whether the purveyor of the PL has mastered these difficulties. On the other hand, this matters less if the consumer believes the product is easy to manufacture as, in this case, almost any manufacturer can deliver a PL of good quality. We thus expect that the perceived quality gap will be higher in categories that are perceived to be more difficult to produce.

Willingness to Pay

Consumers' WTP is expected to be strongly related to their perceptions of the quality gap between NBs and PLs. We further posit that the effects of marketing and manufacturing drivers on WTP are largely mediated by this quality gap. The central role of perceived quality in shaping behavioral intentions is well established in the literature (Steenkamp 1989; Zeithaml 1988). We also propose that the effect of the perceived quality gap on WTP is moderated by consumers' involvement and price-quality schema with respect to the product category in question.

Involvement. Involvement has been consistently identified as a key moderator of the strength of the relation between attitudes and behavioral intentions (Assael 1998). Consumers who are highly involved in a product category associate highly valued outcomes with product use (Bloch and Richins 1983). In such instances, consumers will be more concerned with the product they purchase. As argued by Lichtenstein, Bloch, and Black (1988, p. 246): "People who are highly involved in a product associate important functional, social, and psychological outcomes with the product. Therefore, highly involved consumers care more about product quality." Thus, we expect that consumers who are more involved with a product category are more quality sensitive, and hence the quality gap has a larger effect on their WTP.

Price-quality schema. Consumers encounter vast amounts of quality information. Because of limited cognitive processing abilities, over time consumers develop a repertoire of abstract ideas or "schemas" about the working of the marketplace in order to process incoming information

efficiently (Lichtenstein and Burton 1989). If consumers have come to believe that quality is strongly associated with price, they may look for shortcuts in decision making and will be more likely to evoke what Peterson and Wilson (1985) call a “price-quality schema.” Some consumers have a generalized price-reliance schema in that they equate higher quality with higher price, regardless of category. However, for most people, such schemas are product-category specific (Peterson and Wilson 1985). People that hold a stronger price-quality schema for a category will associate quality with price in that category, and hence their WTP is likely to be more strongly dependent on the perceived quality gap (Lichtenstein, Bloch, and Black 1988).

Private Label Life Cycle

Based on the number of years PLs have been around in a country, we distinguish between two stages in the PL life cycle: Development and Maturity. There is no firm theory to guide us as to the likely differences between countries in the PL-Development versus the PL-Maturity stages on (interrelations between) our constructs, but several plausible propositions can be developed. Our propositions draw on organizational learning theory (Vera and Crossan 2004) and consumer learning theory (Assael 1998). Learning theory posits that retailers (consumers) learn over time as they accumulate experiences with PLs, adjusting their strategies (perceptions) while absorbing feedback about past decisions. Moreover, for our propositions, we draw on the fact that PLs were introduced much earlier in mature economies in North America and Western Europe than in developing economies in Latin America, Eastern Europe, and Asia-Pacific. Since the economic and marketing environment of emerging countries is still quite different from the environment of mature economies (Burgess and Steenkamp 2006), this will also contribute to systematic differences in our model constructs. Comparing model results between PL-Development and PL-Maturity stages is of interest in its own right, but also allows us to peer into the future. International product life cycle theory (Kotabe and Helsen 2004) suggests that by comparing

countries cross-sectionally on key model parameters along this implicit time dimension, we can make informed guesstimates about the future of PLs in countries with a more recent PL history.

Differences in levels of constructs across PL stages. Developing high-quality PLs takes time, and it takes even longer before consumers perceive changes in quality (Mitra and Golder 2006). Therefore, we expect the perceived quality gap between NBs and PLs to be smaller in countries where PLs are in the Maturity stage compared to countries where PLs are still in the Development stage. Further, while in PL-Development countries detailed product information from external sources is not easily available, in (highly developed) PL-Maturity countries, such information is readily available from a number of sources such as *Consumer Reports* (Zhou, Su, and Bao 2002). Few things undermine price-quality schemas more than press reports like “Private label beats national brand,” “Switching to store brands can be a painless way to cut your grocery bill,” “Good products do not have to be expensive,” and “The leading national brands are losing their focus on quality” (all taken from various consumer test magazines; see e.g., *Consumer Reports* 2009). Formalizing this anecdotal evidence, Apelbaum, Gerstner, and Naik (2003) studied the objective quality of NBs and PLs as published in *Consumer Reports*. They found that in more than one out of four CPG categories, the average PL was actually *higher* in objective quality than the average NB. As these findings are likely to undermine consumers’ beliefs about price-quality associations, we propose that consumers in PL-Maturity countries possess a weaker price-quality schema than consumers in PL-Development countries.

PL-Maturity countries have a longer history of PL success in many categories. This will tend to undermine consumer beliefs about the manufacturing edge NBs have. After all, how can PLs be successful over such a long period of time, unless the category is easy to make (cf. Aaker and Keller 1990) or NB manufacturers engage in PL manufacturing (Kumar and Steenkamp 2007)? These beliefs are also undermined by consumer magazine reports that PLs beat NBs on quality,

and that PLs are produced by NB manufacturers. Thus, we expect that consumers in PL-Maturity countries possess weaker beliefs about the difficulty of making a category, while they rate higher on perceptions that PLs are produced by NB manufacturers.

Differences in structural relations between constructs across PL stages. We theorize that marketing efforts by NBs will be more important in shaping the perceived quality gap and WTP in PL-Development countries. This expectation is informed by the notion that the effectiveness of marketing investments will be larger in emerging markets as these countries have a much shorter history of heavy marketing, and consequently, there is more scope to build awareness and cognitions (Burgess and Steenkamp 2006). Moreover, the PL-Maturity countries of North America and Western Europe are postmodern societies (Inglehart and Welzel 2005) where marketing is increasingly looked upon with skepticism (Ritzer 2004). In PL-Maturity countries, the route to success might be back to manufacturing basics (Slater 1997): who produces the private label and how difficult is that?

METHOD

Data Collection

We calibrate our model on a data set that is unique in size and scope. We collected survey data in close collaboration with the global market research agencies TNS and GfK. Respondents in 23 countries from four continents completed the questionnaires: the U.S. (North America), Argentina and Brazil (Latin America), Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the U.K. (Western Europe), Croatia, the Czech Republic, Hungary, Poland, and Slovakia (Eastern Europe), and Taiwan and Thailand (Asia). For countries with a high penetration of the Internet, a web survey was used. In other countries, we used mall intercepts, using the same questionnaire layout. The questionnaire was developed in English and translated into all local languages using back-translation.

Modifications were made based on discussions between back-translators, authors, and headquarters of the market research agencies to maintain consistency across all countries.

Respondents were people that are primarily responsible for grocery purchases in their household, and who at least occasionally patronize stores that sell NBs as well as PLs. They indicated how often they made a purchase in each of ten randomly drawn product categories. Respondents evaluated up to four product categories that were randomly drawn from a subset of the selected ten categories in which the respondents bought at least once every six months. We provided the respondents with definitions and examples of leading PLs and NBs to ensure consistency among respondents about what these terms mean (cf. Ailawadi, Neslin, and Gedenk 2001). These examples were provided by the local subsidiaries of TNS and GfK and were checked by their headquarters. The final section recorded sociodemographics. The samples in each country were drawn so as to be broadly representative of the total population in terms of region, age, education, and gender.

Questionnaires were completed by 22,623 respondents. The number of product categories evaluated per country varied between 28 (Taiwan) and 100 (the U.K.), averaging 63. The product categories were selected to cover a wide range of CPGs. On average, 52 respondents supplied data on each product category in each country, resulting in 74,314 observations.

Measurement

Table 1 provides the measures and sources for all variables and the mean reliability across countries, wherever applicable. We use the percentage-price-premium as measure of the price premium consumers are willing to pay for NBs vis-à-vis PLs. This measure is comparable across consumers, categories, and countries, and is easily interpretable for the respondents. It was also used successfully by Palmatier, Scheer, and Steenkamp (2007). The assumption underlying this measure is that consumers consider percentage price differences rather than absolute differences

(Monroe 1973). Quality gap scores are obtained by subtracting the PLs' quality scores from the NBs' quality scores (cf. Erdem, Swait, and Valenzuela 2006). The perceived quality gap ranges from -4 (PLs much better than NBs) to +4 (NBs much better than PLs).

Note that we include four socio-demographic variables (gender, household size, education, and social class), three product category dummies (beverages, household care, and personal care, with food as the baseline category), and GDP per capita to control for differences across consumers, categories, and countries. These covariates are not the focus of our study, but controlling for their effects provides a stronger test of our hypotheses (Greene 2000).

--- Table 1 about here ---

Validation

Willingness to pay. TNS and GfK conducted pretests in Germany and the U.K. to assess the validity of our WTP measure. Data were collected among about 1,000 consumers per country, for 57 (Germany) and 52 (U.K.) CPG categories. Respondents evaluated up to four CPG categories on WTP. TNS and GfK also provided the actual price premium NBs command in the marketplace, based on their household scanner panels. The actual price premium is unlikely to correspond closely to the price premium consumers are on average willing to pay. After all, the actual price gap in a category is set by retailers who have multiple goals in mind, including generating store traffic, maintaining store image, building loyalty, stimulating PL sales, and maximizing profitability (Ailawadi and Keller 2004). Nevertheless, our survey measure showed significant convergent validity with the actual price premium in the market, the correlation being .50 ($p < .01$) in Germany and .42 ($p < .01$) in the U.K.

Covariates. To allow for a stringent test of convergent and discriminant validity, we included all category-level constructs in a single confirmatory factor model, pooling data across countries and product categories. Although the chi-square was highly significant ($\chi^2(57) =$

8,208.3, $p < .001$), other indicators suggested good fit: comparative fit index = .98; Tucker-Lewis index = .95; and root mean square error of approximation = .04. All indicators loaded significantly ($p < .001$) and substantively (standardized factor loadings exceeded .60) on their hypothesized factors. Moreover, all correlations between constructs were significantly below unity. These findings provide evidence of the convergent and discriminant validity of the measures.

Product innovation, advertising, and price promotion were measured using consumer perceptions (Table 1). This allows us to differentiate the intensity of these marketing instruments experienced by individual consumers. After all, some consumers may be exposed to more advertising messages, promotions, or product innovations for a category than others, dependent on their media and shopping behavior. To validate consumer perceptions, GfK and TNS provided market data for a number of categories and 4 countries (France, Germany, Spain, and the U.K.). Data were provided for the year prior to the survey on (a) the number of new SKUs introduced into a category relative to the total number of SKUs in that category, (b) advertising expenditures in the category, and (c) the proportion of volume sold on promotion in the category. We correlated aggregate category perceptions with these objective category data. Results are given in Table 2. All correlations were significant at $p < .05$ or better, attesting to the validity of our perceptual measures.

--- Table 2 about here ---

Estimation

Our conceptual model involves variables at three levels of aggregation: the individual level (all focal constructs), the category level (the three category dummies), and the country level (GDP per capita). The levels are hierarchical in that $i = 1, \dots, n_{jk}$ individuals are nested within $j = 1, \dots, J_k$ categories, which in turn are nested within each of $k = 1, \dots, K$ countries. To calibrate our

conceptual model, we estimate a Hierarchical Linear Model (HLM) using maximum likelihood.

Following Raudenbush and Bryk's (2002) recommendations, we centered the continuous level-1 predictors within categories and countries, and we grand-mean-centered the level-3 predictor (GDP per capita). Our HLM assumes the level-1 error term u_{ijk} to be normally distributed with zero mean and variance σ^2 , the level-2 error terms u_{pjk} (for coefficient p) to be multivariate normally distributed over categories with zero mean and variance-covariance matrix \mathbf{T}_2 (with $\text{var}(u_{pjk}) = \tau_{pp}$ and $\text{cov}(u_{pjk}, u_{p'jk}) = \tau_{p,p'}$), and the level-3 error terms u_{pk} to be multivariate normally distributed with zero mean and variance-covariance matrix \mathbf{T}_3 . The effects of the predictor variables involved were allowed to vary across categories and countries. The effects of the control variables were constrained to be constant across countries (no random error terms included at levels 2 and/or 3 for these coefficients). Although all coefficients could be specified as random effects, Raudenbush and Bryk (2002) caution against such practice because it negatively affects model convergence and stability of the parameter estimates.

RESULTS

Overall Descriptive Findings

Figure 2 reports WTP averaged across categories within countries expressed as an index (U.S. = 100; adjusted for differences in socio-demographic makeup and categories included in the country samples) versus the market share of PLs in that country. WTP is higher in the U.S. than in most other developed markets. This reflects the strong position that NB manufacturers in the U.S. historically have had vis-à-vis retailers. While most U.S. retailers operate at a regional level, brand manufacturers operate at a national level. This creates a relative disadvantage for U.S. retailers as brand manufacturers benefit from "greater national brand economies of scale in both production and advertising" (Hoch 1996, p. 94).

One would expect that PLs will generally command higher market shares in countries and categories where WTP for NBs is lower. Figure 2 reveals that indeed PL share and WTP are negatively related at the country level. We also correlated PL share and WTP at the category level, by pooling across categories and countries, yielding $N = 1,335$ observations. The resulting correlation is $-.36$ ($p < .001$). Without suggesting a causal relation, both country- and category-level analyses show that WTP is inversely related to PL share.

The average quality gap (on a scale from -4 to +4) is only .34, with only 39% of the observations showing a quality advantage for NBs. In 43% of the cases, consumers see no quality gap between NBs and PLs, while in 18%, consumers perceive PLs to be of better quality than NBs! This provides evidence for the remarkable strides PLs have made in reducing the perceived quality gap with NBs. While there is a lack of a generalized substantial quality advantage for NBs, there is large heterogeneity among consumers: the standard deviation in quality gap perceptions is a high 1.13, for a coefficient of variation of 3.32.

--- Figure 2 about here ---

Perceived Quality Gap

Turning first to the analysis pooled across PL life cycle stages, the effects of the marketing and manufacturing drivers on the perceived quality gap between NBs and PLs are shown in Table 3. We report unstandardized parameter estimates. In multilevel analysis, standardized coefficients are not used as the variance is partitioned across different levels.

As expected, product innovation ($\beta = .04, p < .001$), distinctive packaging ($\beta = .23, p < .001$), and advertising ($\beta = .09, p < .001$) increase the perceived quality gap, while price promotions reduce it ($\beta = -.05, p < .001$). Our expectations concerning the manufacturing drivers are also confirmed by the data. When consumers believe that NB manufacturers produce PLs, the

perceived quality gap with NBs is reduced ($\beta = -.15, p < .001$). Conversely, when consumers believe the product category is difficult to manufacture, the perceived quality gap is higher ($\beta = .05, p < .01$). Hence, we find strong evidence that marketing and manufacturing factors systematically affect the perceived quality gap between NBs and PLs.

--- Table 3 about here ---

Willingness to Pay

Table 3 also shows the effect of the perceived quality gap on WTP, which was hypothesized to be moderated by involvement and price-quality schema. The perceived quality gap is positively related to WTP ($\beta = 2.43, p < .001$). As expected, consumers that are more involved with a category ($\beta = .37, p < .001$) and that hold a stronger price-quality schema for a particular category ($\beta = .97, p < .001$), draw more heavily on the quality gap in forming their WTP.

In addition to their interactive effect with the quality gap, involvement and price-quality schema also have a positive main effect on WTP (involvement: $\beta = 1.76, p < .001$; price-quality schema: $\beta = 3.47, p < .001$). In conditions of high involvement, consumers are willing to pay more for NBs over PLs. Similarly, when consumers believe that paying more brings them greater quality in return, they view price in a more favorable light and are willing to pay more for NBs.

Test of Mediation

The model depicted in Figure 1 suggests that the perceived quality gap mediates the effects of marketing and manufacturing drivers on WTP. We use Baron and Kenny's (1986) sequential procedure to test the mediating effect of perceived quality gap. In the first stage, WTP is regressed on all the antecedent variables (marketing and manufacturing factors) with the proposed mediator (perceived quality gap) excluded from the model. In the second stage, the quality gap is included in the model to assess whether its insertion reduces the effects of the

antecedents on WTP. Mediation occurs if the effects of the antecedents on WTP are reduced in the presence of the mediator and overall fit is improved. Both of these conditions are met, as is shown in Table 4. When the quality gap is added to the model, the effects of all marketing and manufacturing drivers are significantly reduced (all Sobel test statistics are significant at the .05 level or better). Moreover, model fit improves significantly ($\Delta\chi^2(5) = 5,002.2, p < .001$).

The mediating role of the perceived quality gap can be further examined by evaluating the relative magnitude of the indirect effect of an antecedent to its total effect.¹ The right-hand side of Table 4 shows that the ratio of the mediated effect to the total effect ranges between 27.1% (distinctive packaging) and 72.3% (PL production by NB manufacturers), for consumers with average involvement and price-quality schema scores. On average, the perceived quality gap mediates 57.2% of the effects of the marketing and manufacturing drivers on WTP. Collectively, strong support is found for the mediating role of the perceived quality gap.

--- Table 4 about here ---

Private Label Life Cycle

Differences in levels of constructs across PL stages. Table 5 compares the construct means (adjusted for differences in socio-demographic makeup and categories included in the country samples) across the PL-Development and PL-Maturity stages. As expected, the quality gap between NBs and PLs is smaller in countries in the PL-Maturity versus PL-Development stage (.26 vs. .53, $p < .05$). Further, consumers in PL-Maturity countries hold weaker price-quality schemas (2.88 vs. 3.22, $p < .05$) and weaker beliefs about the difficulty of making the product (2.59 vs. 2.86, $p < .05$) than consumers in PL-Development countries. Surprisingly, the perception that PLs are produced by NB manufacturers is equally strong in both stages ($p > .05$).

Looking at differences for which we had no specific expectations, we find that consumers in countries in the PL-Development stage are more involved with CPG product categories than

consumers in the PL-Maturity stage (3.40 vs. 3.20, $p < .05$). In terms of the marketing drivers, consumers do not perceive differences in the level of advertising and price promotion across the two stages ($p > .05$). However, consumers in countries in the PL-Development stage perceive more product innovations in the category than consumers in countries in the PL-Maturity stage (3.36 vs. 3.25, $p < .05$). Conversely, in PL-Maturity countries consumers rate NBs higher on distinctive packaging (3.37 vs. 3.21, $p < .05$). Finally, WTP is higher in the PL-Development stage than in the PL-Maturity stage (12.79 vs. 10.56, $p < .05$). Thus, the more mature PLs are, the less consumers are willing to pay a price premium for NBs over PLs. To understand why this is the case, we now turn to an analysis in which we test whether the effects of the antecedents of WTP differ for countries in the PL-Development stage compared to countries in the PL-Maturity stage.

--- Tables 5 and 6 about here ---

Differences in structural relations between constructs across PL stages. We first estimated a model in which we let PL stage interact with each of the focal independent variables. In a second step, only the significant interaction effects with PL stage were retained.² The results are intriguing (see Table 6).

The effects of the drivers of the perceived quality gap differ substantially across the two PL stages. More specifically, we find that the effects of distinctive packaging and advertising on the perceived quality gap between NBs and PLs are significantly larger in the PL-Development stage than in the PL-Maturity stage ($p < .05$). No significantly different effects on the perceived quality gap were found for the other two marketing drivers (product innovation and price promotion), although the effects were in the same direction (stronger effects in the PL-Development stage). Thus, there is evidence that marketing efforts (in particular distinctive packaging and advertising) play a bigger role in enhancing quality gap perceptions in countries with a more

recent PL history than in countries with a longer PL history.

With respect to the manufacturing factors, the picture reverses. The belief that PLs are produced by NB manufacturers plays a significantly larger role in reducing the perceived quality gap in the PL-Maturity stage than in the PL-Development stage ($p < .05$). Thus, while there is no difference in the mean levels of the extent to which consumers in the different PL stages believe that PLs are produced by NB manufacturers, the detrimental *effect* of this belief on WTP is much stronger in countries with a longer PL history. Although the belief that producing good-quality products is difficult had a larger detrimental effect on the perceived quality gap in the PL-Maturity stage than in the PL-Development stage, the difference was not significant ($p > .05$).

Collectively, the manufacturing factors explain about twice as much of the level-1 variance in the quality gap in the PL-Maturity stage than in the PL-Development stage (4.2% compared to 2.2%), whereas the level-1 variance explained by the marketing drivers is about 25% lower in the PL-Maturity stage than in the PL-Development stage (5.6% compared to 7.4%). Thus, “marketing” matters more when PLs are a relatively recent phenomenon, whereas “manufacturing” matters more when PLs are more established.

If we turn to the WTP regression, we find that the perceived quality gap affects WTP equally strongly in the PL-Development and the PL-Maturity stage. However, the average perceived quality gap is larger in the PL-Development stage (Table 5). Thus, as far as the main effect is concerned, the larger perceived quality gap (rather than a difference in quality sensitivity) represents the reason for the higher WTP in the PL-Development stage. Involvement and price-quality schema enhance the effect of the quality gap to the same extent across stages.

The direct effect of price-quality schema on WTP differs significantly across the two stages: its effect is larger in PL-Maturity countries ($\beta = 3.73, p < .001$) than in PL-Development countries ($\beta = 3.05, p < .001$). However, the net effect on WTP is counterbalanced by the lower

average levels of price-quality schema in PL-Maturity countries. Thus, in PL-Maturity countries, consumers on average hold weaker beliefs about price-quality associations, but when these beliefs strengthen, the effect on WTP is stronger than for consumers in PL-Development countries.

For both PL stages, the perceived quality gap significantly mediates the effect of marketing and manufacturing factors on WTP. The mediational role of the quality gap works out differently in the two PL stages, because the marketing and manufacturing drivers differentially affect the quality gap across the stages. In sum, marketing is more effective to increase consumers' WTP for NBs in PL-Development than in PL-Maturity countries. In contrast, manufacturing beliefs about PLs play a larger role in PL-Maturity than in PL-Development countries.

DISCUSSION

We develop a model of the price premium consumers are willing to pay for NBs over and above PLs. We estimate our WTP model on a unique data set, collected among 22,623 respondents from 23 countries on four continents. WTP is in general inversely related to PL success, across categories and countries. We find systematic effects of marketing and manufacturing factors on the perceived quality gap and WTP and document the pivotal moderating role of price-quality schema and involvement. We compare the model components along two stages of the PL life cycle. Whereas the perceived quality gap exerts an equally strong influence in countries in both stages of the PL life cycle, the antecedents of the perceived quality gap differ significantly across the two stages. In countries in the PL-Development stage –the engine of the future growth of NBs – marketing (especially advertising and distinctive packaging) is more effective in increasing the perceived quality gap between NBs and PLs than in countries in the PL-Maturity stage. In contrast, in countries in the PL-Maturity stage, there is a need to go back to the manufacturing basics. Especially the belief that PLs are produced by NB manufacturers exerts a

stronger (negative) influence on the perceived quality gap than in PL-Development countries.

Managerial Implications

To compensate for falling sales volumes, many NB manufacturers have started increasing their prices, as discussed in the introduction. Can brand managers uphold their price premiums vis-à-vis PLs, despite sliding sales volumes and recessionary markets? We believe they can, but that the challenges are somewhat different in different regions of the world, depending on their stage of PL development.

Marketing factors. The starting point of any turnaround strategy is to embark on a program of significant quality improvement, both in PL-Development and PL-Maturity countries. After all, it is worrisome that objective tests reveal that there is often little if any quality difference between PLs and NBs (Apelbaum, Gerstner, and Naik 2003), while we find that the perceived quality gap is on average small too. We show that *product innovation* significantly increases the perceived quality gap (irrespective of the country's PL life cycle stage), which in turn leads to a higher WTP. CPG companies need not only rely on major new product innovations; even minor innovations can contribute to NB success (Gielens and Steenkamp 2007).

We further document the key role *advertising* plays in enhancing the perceived quality gap and WTP, both in PL-Maturity countries and even more so in PL-Development countries. It is well-known that advertising is especially effective in combination with new product launches. Thus, it is worrisome that in recessionary times when NBs are already under pressure, companies cut back on advertising and innovation activity (Axarloglou 2003; Deleersnyder et al. 2009). A cost-effective option is to run a collective advertising campaign, such as the campaign by the Austrian Association of Brand Manufacturers (which counts companies like Mars and P&G as members) with the slogan "Die Marke garantiert den Unterschied" [the brand guarantees the difference]. The motivation for this campaign was that "many consumers think that PLs and NBs

are actually the same product, only in different packaging.” (Österreichischer Verband der Markenartikelindustrie 2004). The campaign has since been adopted by several other national associations of brand manufacturers in Europe.

Distinctive packaging is the strongest driver of the perceived quality gap and has a strong direct effect on WTP. Unfortunately, copycatting of NBs is rampant. At the 2009 Benelux Branding Congress, Sara Lee’s Vice President Legal Affairs sharply criticized copycatting practices by PLs (Kist 2009). But criticism is not enough. Historically, NB manufacturers have been reluctant to vigorously go after PL copycatting for two reasons: How do you sue your own customers? And will an aggressive stance result in being removed from the shelves of the retailer in question? Our results indicate that a timid response is no longer tenable – the effect of distinctive packaging is too strong to ignore. Brand manufacturers need to develop a reputation for aggressively pursuing retail copycat violators. The experience of companies like Coca Cola, Unilever, P&G, and Kraft shows that actively pursuing any trademark and package infringement can be very effective in the fight against copycatting (Kumar and Steenkamp 2007).

Heavy *price promotions* condition consumers to focus primarily on price and dilute the perceived quality gap between PLs and NBs, irrespective of the PL stage. Thus, we document a third jeopardy of price promotions: not only do price promotions make consumers more price sensitive (e.g., Mela, Gupta, and Lehmann 1997) and do they lower baseline sales (e.g., Jedidi, Mela, and Gupta 1999), they also decrease the WTP for NBs over PLs (this study). Hence, another managerial lever to increase the perceived quality gap and therefore WTP is to *decrease* the intensity of price promotions. Our contrasting findings for advertising and price promotions show that a shift in promotion budgets from price promotions to advertising is called for. This is exactly the opposite of current NB practice.

Manufacturing factors. Our study shows that for countries in the PL-Maturity stage, the

marketing mix is still effective in increasing the perceived quality gap, but it is less effective than in PL-Development countries. This attests to the fact that marketing is increasingly looked upon with scepticism in these countries. If this trend is going to continue, marketers are going to have a hard time fighting PLs using the traditional marketing instruments. Instead, our results suggest that they should pay more attention to the manufacturing side of the story.

NB managers in PL-Maturity countries should counter the *belief that PLs are produced by NB manufacturers*. This belief is likely to become more widespread as consumers get more connected to each other via online networks. As a case in point, German consumers share their production beliefs and knowledge on sites such as <http://www.discounter-archive.de>.

The most straightforward way to counter this belief is to not embark on producing PLs or to stop producing PLs. A number of NBs, such as Tylenol and Pledge, have decided to stay away from manufacturing PLs, and to communicate this to consumers. Tylenol runs TV ads in which employees make the following promise: “We don’t make store brand pain relievers. We make Tylenol.” Pledge announces on its packaging in red bold capital letters that “THIS FORMULA IS NOT SOLD TO ANY RETAILER AS A STORE BRAND.” But these are exceptions rather than the rule. Most NBs that do not engage in PL production provide this information in fine print, if at all. NBs need to be much more explicit if they want to fight consumer perceptions that PLs are produced by NB manufacturers.

The *belief that the production of the product category is difficult* is the other manufacturing factor that enhances the quality gap and WTP, irrespective of the PL life cycle stage. Ads that stress the amount of knowledge that goes into producing good quality products may enhance this belief and create the basis to charge a price premium. The Dutch beer manufacturer Grolsch used to run TV ads showing the craftsmanship required in many different professions (e.g., making musical instruments), and by projection, in brewing good beer. Product harm crises might also be

turned to NBs' advantage. Recently, several PL products containing acetaminophen were recalled. In response, Tylenol ran ads to reassure consumers that it was not involved in the recall, and that "Tylenol products are safe and manufactured with the highest quality standards."

Consumer factors. For countries in either PL stage, strengthening consumers' *price-quality schema* and *involvement* renders the quality gap much more effective in terms of WTP.

Continuous quality improvement is a prerequisite for consumers to maintain their price-quality schema for the category. Advertising messages may reinforce the idea that good quality is worth a higher price. For example, TV commercials for P&G's Dreft (hand dishwasher liquid) show that while the product cost more than its unbranded rival, it also lasts much longer.

Increasing the personal relevance of the category (involvement) can also make a big difference. Although relevance resides in the consumer, companies can work hard to create emotional bonds with consumers, even in such mundane categories as breadcrumbs and canned beans (Fournier 1998). Traditional advertising plays an important role in increasing the personal relevance of the category, but new forms of communication such as buzz marketing can also be fruitfully employed, as shown for example by Red Bull in the energy drink market.

Future Research

Our study has several limitations that offer opportunities for future research. Product innovation, advertising, and price promotion were measured using survey data, as we were unable to acquire advertising and promotion expenditures and numbers of new product introductions for all countries and categories. Future research should replicate our findings using objective measures.

Another data limitation is that countries in the PL-Development stage also tend to be countries in which Western NBs were introduced later than in countries in the PL-Maturity stage. As such, this reduces our ability to disentangle the effect of the number of years PLs have been around in a country and the number of years Western NBs have been available. Additionally, we

measure PL stage at the country level. TNS and GfK considered it infeasible to collect reliable and valid data on the exact start date of PLs across 1,454 country-category pairs. As a result, our PL stage variable may contain some measurement error. Results for error-in-variable models (Greene 2000, p. 378) suggest that our significant effects of PL stage represent a conservative test of the true effects. Future research could attempt to collect information on PL introduction dates in specific categories for perhaps one country with a long PL presence. We focus on the generic battle between NBs versus PLs, rather than on specific NBs or particular PLs. It would be interesting to study the drivers of WTP for individual NBs, and contrast them with specific PLs.

Consumers may engage in trading up in one category and trading down in another (Silverstein and Fiske 2003). Our study design does not lend itself well to study this aspect of WTP, since each consumer had to rate maximally four categories. Future research may be able to develop some advanced imputation scheme to combine the information across all consumers to understand how trading up and down actually works out.

In sum, while our results do not bode well for NBs in the sense that WTP decreases as PLs mature, we offer several managerial recommendations to buck this trend. In PL-Maturity countries, the route to success is to go back to manufacturing basics. In PL-Development countries, there is a stronger role for marketing. We hope this study will be useful to managers across the globe and will spark additional research on the epic battle between NBs and PLs.

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Table 1
VARIABLES AND DATA SOURCES

<i>Construct</i>	<i>Operationalization^a</i>	<i>Data Source</i>
Willingness-to-pay	In the category X, how much more are you willing to pay for a brand compared to a shop's own label? 0% (nothing), 10% more, 20% more, 30% more, 40% more, 50% more, 75% more, 100% more (twice as much), more than 100% (more than twice as much). The latter category was recoded to 125%.	Adapted from Palmatier, Scheer, and Steenkamp (2007)
Perceived quality gap	In the category X, the quality of brands is very high. In the category X, the quality of shops' own labels is very high. Quality gap scores were obtained by subtracting the private labels' quality scores from the national brands' quality scores.	Erdem, Swait, and Valenzuela (2006)
<i>Marketing factors</i>		
Product innovation ($\bar{\alpha} = .84$)	In the category X, new products are frequently introduced. There are many new product introductions in category X.	Own development
Distinctive packaging ($\bar{\alpha} = .60$)	On the shelf of category X, I cannot tell a shop's own label from a brand as packages are very similar. ® In the category X, shops' own labels and brands look very similar. ®	Own development
Advertising ($\bar{\alpha} = .86$)	Brands in the category X are heavily advertised in magazines, radio, or TV. There is a lot of advertising for brands in the category X.	Yoo, Donthu, and Lee (2000)
Price promotion ($\bar{\alpha} = .74$)	There is always a special offer in category X. It is easy to find a special offer in category X.	Yoo, Donthu, and Lee (2000)
<i>Manufacturing factors</i>		
PL production by NB manufacturers	In the category X, shops' own labels are produced by brand manufacturers.	Own development
Difficulty of producing the product	In the category X, making good quality products is difficult.	Adapted from Aaker and Keller (1990)

Moderators

Involvement ($\bar{\alpha} = .83$)	The category X is very important to me. The category X interests me a lot.	Zaichkowsky (1985)
Price-quality schema ($\bar{\alpha} = .76$)	In the category X, higher priced products provide better quality than lower priced products. In the category X, the higher the price for a product, the higher the quality of the product.	Lichtenstein and Burton (1989)
PL life cycle stage	Dummy: one for PL-Maturity stage (countries where PLs were introduced before 1980) and zero for PL-Development stage (countries where private labels were introduced after 1985). Countries classified in the PL-Maturity stage include Austria, Belgium, Brazil, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland, the U.K., and the U.S. Countries classified in the PL-Development stage include Argentina, Croatia, Czech Republic, Hungary, Poland, Portugal, Slovakia, Taiwan, and Thailand.	GfK / TNS

Control variables

Gender	What is your gender? Dummy: one for men and zero for women.	GfK/TNS
Household size	What is the size of your household? Please count all persons (adults as well as children) that live in your household at least four days per week, including yourself.	GfK/TNS
Education	Which of these best describes your highest level of education? 1 = no formal education, 2 = education up to age 12, 3 = up to age 14, 4 = up to age 16, 5 = up to age 18, 6 = higher education, 7 = university.	GfK/TNS
Social class	If people in our society are divided into upper, upper-middle, middle, lower-middle, working, and lower classes, which class do you think you belong to? (1 = lower class, 2 = working class, 3 = lower-middle class, 4 = middle class, 5 = upper-middle class, 6 = upper class). Operationalized as a dummy variable which equals one if a consumer's social class is higher than the country median and zero otherwise.	GfK/TNS
GDP per capita	GDP per capita in thousands of U.S. dollars.	World Bank

^a With the exception of willingness-to-pay, PL life cycle stage, and the control variables, all items were scored using a 5-point scale with the following categories: “strongly disagree,” “disagree,” “neither agree nor disagree,” “agree,” and “strongly agree.”

^b n.a. = not applicable

® = reverse coded

Table 2
VALIDATION OF MARKETING MEASURES

	<i>Product Innovation</i>		<i>Advertising</i>		<i>Price Promotion</i>	
	<i>correlation (perceptions^a objective data)</i>	<i># categories</i>	<i>correlation (perceptions, objective data)</i>	<i># categories</i>	<i>correlation (perceptions, objective data)</i>	<i># categories</i>
France	.55 ^{***}	51	.59 ^{***}	53	.43 ^{**}	51
Germany	.34 ^{**}	59	.55 ^{**}	31	.59 ^{***}	59
Spain	.47 ^{**}	41	.53 ^{***}	41	.47 ^{**}	41
U.K.	.31 [*]	52	.46 ^{***}	51	.74 ^{***}	52

*** $p < .001$, ** $p < .01$, * $p < .05$

^a Perceptions are averaged across consumers within a category.

Table 3
OVERALL MODEL ESTIMATION RESULTS

	<i>Quality Gap</i>		<i>Willingness to Pay</i>	
	<i>Estimate</i>	<i>t-value</i>	<i>Estimate</i>	<i>t-value</i>
Intercept	.30	6.44***	10.07	22.22***
Product innovation	.04	4.42***		
Distinctive packaging	.23	12.78***		
Advertising	.09	7.73***		
Price promotion	-.05	-4.61***		
PL production by NB manufacturers	-.15	-9.26***		
Difficulty of producing the product	.05	3.34**		
Quality gap			2.43	13.72***
Involvement			1.76	12.36***
Quality gap * Involvement			.37	4.88***
Price-quality schema			3.47	19.97***
Quality gap * Price-quality schema			.97	6.64***
<i>Control variables</i>				
Gender	-.01	-.66	.12	.99
Household size	-.01	-4.05***	.10	2.50*
Education	-.01	-2.44*	.87	16.97***
Social class	.05	11.63***	.32	5.35***
Beverages	.14	8.12***	2.66	11.73***
Personal care	.17	11.00***	2.41	11.38***
Household care	-.01	-.69	-.37	-1.54
GDP per capita	-.00	-.68	-.13	-6.18***
2LL		-110,151.1		-306,128.6

*** $p < .001$, ** $p < .01$, * $p < .05$

Table 4
MODEL ESTIMATION RESULTS:
THE MEDIATING ROLE OF THE PERCEIVED QUALITY GAP

	<i>Total Effect on Willingness to Pay</i>		<i>Direct Effect on Willingness to Pay</i>		<i>Indirect Effect on Willingness to Pay</i>
	<i>Estimate</i>	<i>t-value</i>	<i>Estimate</i>	<i>t-value</i>	<i>% mediation^a</i>
Intercept	10.10	23.28***	9.83	22.38***	
Product innovation	.95	6.73***	.29	2.67*	69.5%
Distinctive packaging	3.17	10.50***	2.31	9.14***	27.1%
Advertising	1.13	10.49***	.50	4.90***	55.8%
Price promotion	.30	1.35	-.16	-1.09	46.7%
PL production by NB manufacturers	-.94	-4.72***	-.26	-2.26*	72.3%
Difficulty of producing the product	1.07	5.41***	.30	2.37*	72.0%
Quality gap			2.05	12.72***	
Involvement			1.59	10.97***	
Quality gap * Involvement			.33	4.09***	
Price-quality schema			3.46	17.24***	
Quality gap * Price-quality schema			.81	5.64***	
<i>Control variables</i>					
Gender	.16	1.19	.27	2.19*	
Household size	.04	1.06	.11	2.89**	
Education	.72	13.33***	.78	15.46***	
Social class	.72	11.39***	.35	5.94***	
Beverages	2.80	11.70***	2.50	11.17***	
Personal care	2.73	12.24***	2.41	11.56***	
Household care	-.57	-2.25*	-.45	-1.89	
GDP per capita	-.081	-3.09**	-.13	-6.66***	
2LL	-310,232.7		-305,230.5		

*** $p < .001$, ** $p < .01$, * $p < .05$

^a The mediated effect as a proportion of the total effect, for consumers with average involvement and price-quality schema scores.

Table 5
DESCRIPTIVE STATISTICS: CONSTRUCT MEANS ACROSS PL STAGES

	<i>Expectation Relative to PL-Maturity Stage</i>	<i>Mean Score</i>		<i>Significantly Different? (p < .05)</i>
		<i>PL-Development Stage</i>	<i>PL-Maturity Stage</i>	
Quality gap	Larger in the PL-Development stage	.53	.26	Yes
Price-quality schema	Larger in the PL-Development stage	3.22	2.88	Yes
PL production by NB manufacturers	Smaller in the PL-Development stage	3.13	3.24	No
Difficulty of producing the product	Larger in the PL-Development stage	2.86	2.59	Yes
Involvement		3.40	3.20	Yes
Product innovation		3.36	3.25	Yes
Distinctive packaging		3.21	3.37	Yes
Advertising		3.53	3.46	No
Price promotion		3.26	3.22	No
Willingness to pay		12.79	10.56	Yes

Table 6
MODEL ESTIMATION RESULTS ACROSS PL STAGES^a

	<i>Quality Gap</i>		<i>Willingness to Pay</i>	
	<i>PL- Development Stage</i>	<i>PL- Maturity Stage</i>	<i>PL- Development Stage</i>	<i>PL- Maturity Stage</i>
Intercept		.29***		9.80***
Product innovation		.04***		
Distinctive packaging	.29***	.09***		
Advertising	.11***	.07***		
Price promotion		-.05***		
PL production by NB manufacturers	-.12***	-.17***		
Difficulty of producing the product		.05***		
Quality gap				2.42***
Involvement				1.77***
Quality gap * Involvement				.36***
Price-quality schema			3.05***	3.73***
Quality gap * Price-quality schema				.98***
<i>Control variables</i>				
Gender		-.01		.12
Household size		-.01***		.10*
Education		-.01*		.87***
Social class		.05***		.32***
Beverages		.14***		2.66***
Personal care		.17***		2.42***
Household care		-.01		-.37
GDP per capita		.01**		-.10***
2LL		-110,144.9		-306,124.6

*** $p < .001$, ** $p < .01$, * $p < .05$

^a Coefficients that differ between the two stages are significantly different at $p = .05$.

Figure 1
CONCEPTUAL FRAMEWORK

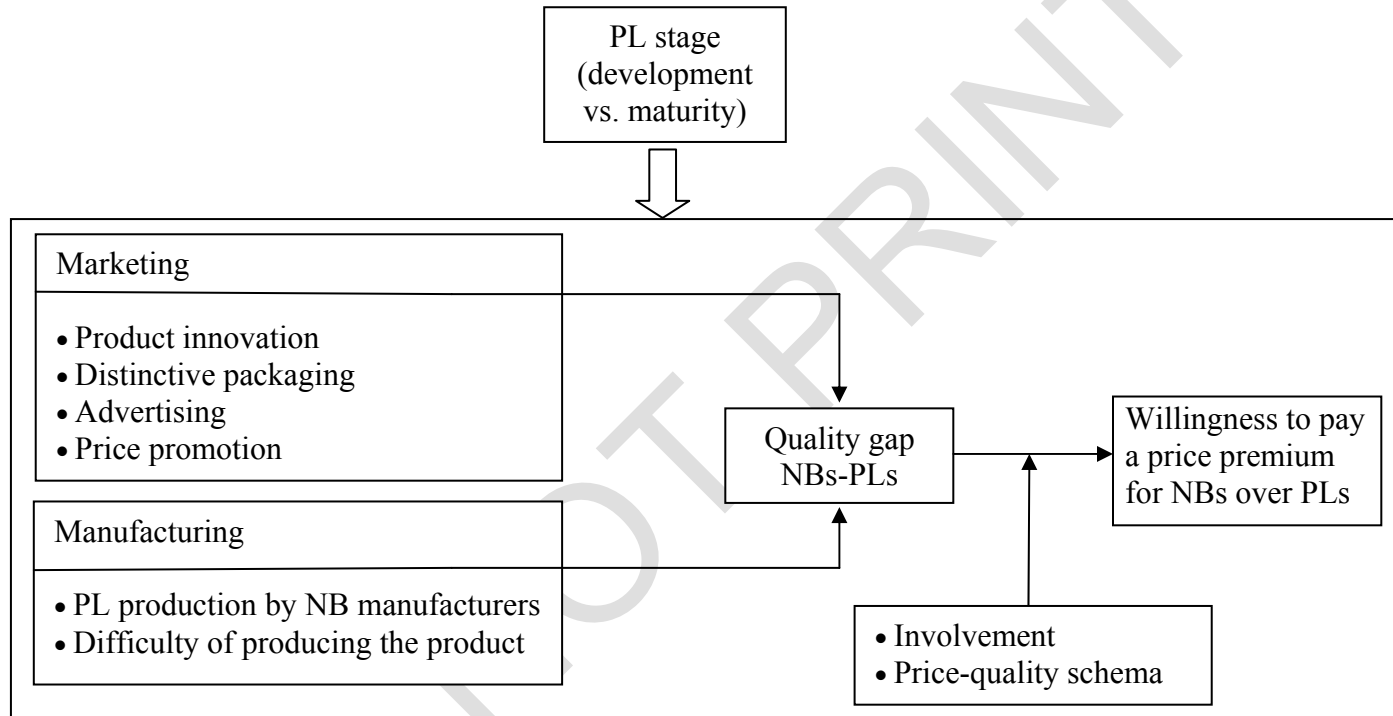
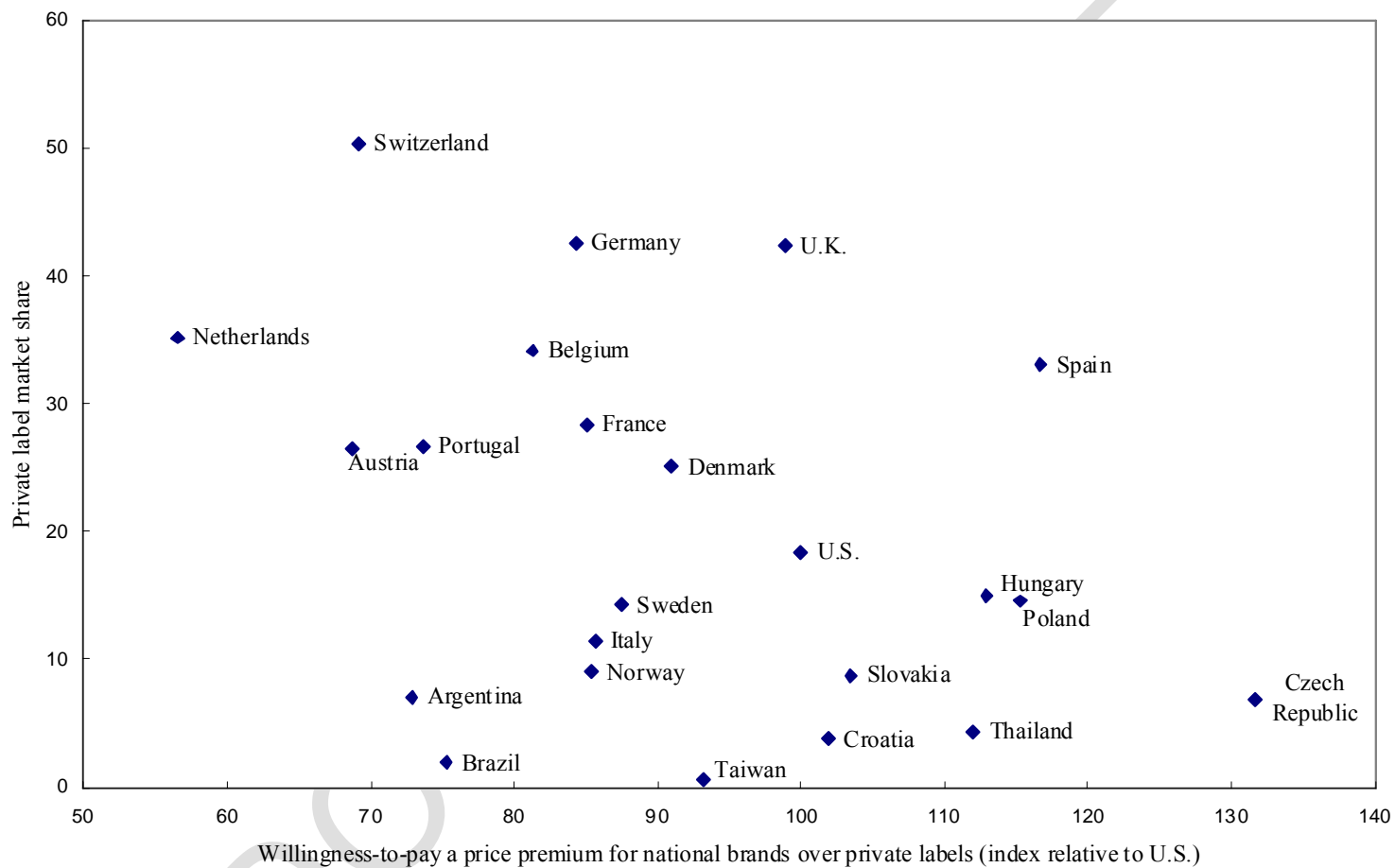


Figure 2
WILLINGNESS TO PAY AND PRIVATE LABEL SHARE AROUND THE WORLD



End notes

¹ A problem arises when direct and indirect effects differ in sign, because the proportion can be greater than one or even negative. A solution proposed by Alwin and Hauser (1975) is to take the absolute values of the quantities when computing the percentage mediated.

² No substantive differences occurred between the model including all interaction effects and the model in which we retained only the significant interactions. For ease of interpretation, we only report the latter.

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