

Research Paper

Are behavioral pricing tactics also present in the B2B context? Evidence from a complex chemical B2B product

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Applying behavioral pricing tactics is common in business-to-consumer (B2C) markets and can result in a competitive advantage. One aspect of behavioral pricing is the use of price ending effects. While a lot of prior research focused on B2C markets, little research has been done to provide insights on price ending effects in business-to-business (B2B) markets. This study addresses this research gap by investigating price endings using the example of a highly complex chemical B2B product. The results reveal a high use of dominant price endings, indirectly indicating positive price threshold effects for this B2B product. The identified dominant price endings are similar to those observed in B2C studies and are thus strongly suggesting that current B2C price ending theories may also be applicable to B2B markets.

1 Introduction

The behavioral pricing research adds psychological and behavioral aspects to pricing research by applying theories from social cognition and behavioral decision research (Somervuori, 2012). Albeit some reviews on behavioral pricing have been conducted (e.g. Monroe, 1973; Winer, 1988), there is still no clear, uniform conceptualization (Somervuori, 2012). Behavioral pricing can be defined as follows: “Behavioral pricing constitutes an expansive subset of pricing research wherein prices and pricing are examined with respect to their human elements – that is, with respect to how humans attend to, perceive, process, and evaluate price information, as well as how they go about determining the price at which a particular item should be sold or purchased” (Miyazaki, 2003, p. 471).

In order to influence the demand positively, behavioral aspects in pricing tactics are commonly used in B2C markets (Hinterhuber and Liozu, 2014). One of these effects is the compromise effect, where customers tend to avoid extreme options and instead choose intermediate options (Simonson, 1989). Therefore, pricing managers can increase the likelihood that the customer buys the premium product by adding a super-premium product to the portfolio (Hinterhuber and Liozu, 2014). Another important aspect of behavioral pricing research

are price threshold and price ending effects which have so far almost exclusively been detected in the B2C context (Hinterhuber, 2015; Monroe et al., 2015). Companies active in B2C markets already use specific price endings in pricing tactics in order to affect customers’ behavior. The question is whether those price ending effects are also transferable to the B2B context (Hinterhuber and Liozu, 2014; Monroe et al., 2015; Wilson, 2000). If so, findings concerning B2C price endings might open up new opportunities for B2B companies with regard to influencing their customers’ decision-making. To provide an answer concerning the transferability, this exploratory study is thus investigating the price endings used within the B2B market on the basis of the example of a highly complex chemical product. In this study, the focus lies on identifying the frequency of occurrence of certain price endings and deducing whether or not behavioral pricing tactics are also present in the B2B context. After this introduction, the literature on price thresholds and price endings is summarized and hypotheses concerning price endings in B2B markets are deduced. In the subsequent sections, the underlying data and method of this exploratory study are described and the results are presented and discussed. This paper concludes with the findings and an outlook on further research.

2 Literature review

The following section provides an overview of the current state of price threshold and price ending research. Relevant price ending theories and empirical evidence are summarized before deducing the hypotheses for pricing tactics in B2B contexts.

2.1 Price thresholds and price endings in B2C markets

The concept of price thresholds addresses the sudden change in the customer's price evaluation at a specific price point, whereby a distinction is made between absolute and differential price thresholds (Monroe, 1973). Absolute price thresholds are price points where customers stop purchasing due to the fact that some customers will either find the product/service too expensive (upper absolute price threshold) or too cheap so that they become suspicious of its quality (lower absolute price threshold) (Bruno et al., 2012; Monroe et al., 2015). The upper and lower absolute price threshold border the range of prices where a customer considers purchasing a product/service. This is referred to as acceptable price range (Monroe, 1971). In contrast, differential price thresholds are sudden changes in the customer's price evaluation within the acceptable price range. Those abrupt changes in the perceived relative expensiveness of the offering occur with increasing prices (Monroe, 1973). However, the perceived price difference does not necessarily lead to a shift in the buying behavior. For instance, George et al. (1996) showed that a price change of more than 8-10% is required in order to significantly influence the purchasing behavior in the case of household products of varying brands.

The existence of price thresholds has been accepted, in particular with regard to odd and round prices, which differ in their rightmost digit. Round prices are often defined as 0- or 5-ending prices (e.g. \$130 or \$145). In contrast, odd prices include one of the other eight possible digits at the rightmost position, whereby the price threshold research has so far focused on the digit 9 (Janiszewski and Lichtenstein, 1999; Kalwani et al., 1990; Schindler and Kirby, 1997).

The existing empirical research shows that 0-, 5-, and 9-ending prices are more regularly used compared to other price endings in the B2C context. Table 1 provides an overview of the shares of specific price endings identified by selected studies. Those studies reveal that the digit 9 is the most frequently applied price ending in the B2C context, but the magnitude of relative frequency varies

across product categories. In addition, there is a tendency of using 9-ending prices more often for low-priced or low-quality products, while 0- and 5-ending prices are either used for high-priced or low-priced products (Kreul, 1982; Lee et al., 2009; Naipaul and Parsa, 2001; Stiving, 2000). For example, in the restaurant industry, price endings on the digit 5 are used for high-quality food whereas 9-ending prices are characteristic for low-quality food (Naipaul and Parsa, 2001). Lee et al. (2009) found similar results for products in internet-based selling. They showed that internet retailers use 9 price endings for low-priced products (prices < \$100) and 0 and 5 price endings for prices over \$100.

2.2 Price ending theories

A number of theories has been proposed to explain the frequent use of 0-, 5-, and 9-price endings. Relevant theories also applicable to the B2B context are the cognitive accessibility theory (Schindler and Kirby, 1997), affective effect theory (Nguyen et al., 2007), image effect theory (Stiving and Winer, 1997), perceived gain effect theory (Schindler and Kirby, 1997), rational inattention theory (Levy et al., 2007) and underestimation theory (Schindler and Kirby, 1997).

The cognitive accessibility theory is based on the observation that in different numerical estimation tasks, people show a strong tendency towards 0- and 5-ending numbers (Hultsman et al., 1989; Tarrant and Manfredi, 1993). In pricing context, Schindler and Wiman (1989) investigated this phenomenon and found that customers tend to produce 0- and 5-ending prices when recalling prices. Thus, the digits 0 and 5 are more accessible in memory (Fazio et al., 1982; Higgins et al., 1977), which is also valid within the pricing context as 0- and 5-ending prices seem to be more cognitive accessible than the other eight possibilities (Estelami, 1999; Guido and Peluso, 2004; Schindler and Kirby, 1997). In addition, results suggest that 0-ending numbers have a higher cognitive accessibility than 5-ending numbers (Schindler and Kirby, 1997). It seems as if this tendency to favor round numbers is very deeply ingrained in human cognitive processing (Schindler and Kirby, 1997; Yoshida and Kuriyama, 1986). Thus, the frequent use of this kind of prices is explained as they are easier perceived, remembered and compared (Estelmani, 1999; Schindler and Kirby, 1997).

Affective effect theory states that odd prices (e.g. 9-ending prices) can be perceived as a manipulative marketing tool by customers, leading to a negative affective state (Schindler, 2006). In contrast, round prices can elicit a positive affective state if customers perceive them as honest and

Table 1 Overview of the relative frequency of specific price endings in the B2C context.

Data	Frequency of occurrence (%)			Study
	9-ending	5-ending	o-ending	
Catalog prices of women's clothing by two companies	52 68	n/a	n/a	Anderson, Simester (2003)
Menu prices of 242 restaurants	58 ^a 11 ^b	35 ^a 71 ^b	6 ^a 15 ^b	Kreul (1982)
3,290 menu prices from fine-dining restaurants	13	57	31	Naipaul, Parsa (2001)
2,878 menu prices from quick-service restaurants	33	37	30	Naipaul, Parsa (2001)
1,538,872 prices from different product categories in internet-based selling	39	14	16	Lee et al. (2009)
Prices and food & nonfood product categories	54	17	5	Macé (2012)
1,415 prices in newspaper advertisement	31	19	27	Schindler, Kirby (1997)
24,770 prices of tuna	51	n/a	0	Stiving, Winer (1997)
2,464 prices of yogurt	36	n/a	11	Stiving, Winer (1997)

^aprice ≤ \$6.99; ^b\$7.00 ≤ price ≤ \$10.99

unchanged (Suri et al., 2002). Thus, in order to avoid negative affective states coupled to the use of odd prices and rather stimulate positive affective states, this theory favors the use of round prices.

Image effect theory distinguishes between two effects to explain the frequent use of specific price endings: the price image effect and the quality image effect. The price image effect argues that 9- and 99-ending prices indicate low prices leading to a low-price image and therefore potentially to higher sales. In contrast, the quality image effect argues that odd prices (e.g. 9- and 99-ending prices) indicate low quality, while round prices (e.g. o-ending prices) are a signal for high qualitative products which might enhance its desirability. Thus, by choosing price endings, companies can either produce a low-price or a high-quality image (Stiving and Winer, 1997).

The perceived gain effect is based on the higher cognitive accessibility of round numbers. The digits 0 and 5 are reference points in price evaluations for customers. According to the prospect theory (Kahneman and Tversky, 1979), 9-ending prices can be framed as a round price with a small gain (Schindler and Kirby, 1997). Here, the perception of gains is disproportionate to the gain's small size, which is thus enhancing the evaluation of prices ending with a 9 (Schindler and Kirby, 1997; Thaler, 1985). This enhancement is termed perceived gain effect and could be an explanation of why companies favor 9-ending prices (Schindler and Kirby, 1997).

The rational inattention theory suggests that customers may be rational inattentive to the right-most digit(s) of prices due to being constrained by time, limited resources or information processing

capacities (Levy et al., 2007). Thus, companies favor setting the last digit as high as possible at 9¢ or \$9 (Lee et al., 2009).

Considering the findings that customers tend to process prices from left to right and favor round prices (Pollock and Schwartz, 1984), the underestimation effect theory states that customers may truncate an advertised price into a round-number mental presentation. For example, a price such as \$799 would be encoded as \$790 if just the first two digits are processed (Schindler and Kirby, 1997). This leads to an overrepresentation of 9-ending prices.

In sum, all presented theories indicate that customers tend to process prices not as a whole and that the specific price endings may affect the customer's buying behavior (Lee et al., 2009).

2.3 Empirical evidence

A lot of studies have been conducted to support each theory and to explain the dominance of specific price endings, especially 9-endings. Table 2 summarizes selected empirical studies on price endings in the B2C context. Interestingly, the studies show inconclusive results, e.g. concerning the quality image effect (Dodds and Monroe, 1970; Naipaul and Parsa, 2001; Stiving, 2000). Furthermore, while some studies provide evidence that 9-ending prices increase sales (Anderson and Simester, 2003; Lee et al., 2009; Schindler and Kibarian, 1996), other studies do not detect any effects (Dodds and Monroe, 1985; Ginzberg, 1936).

2.4 Price endings in B2B markets

Although B2B markets include challenges that differ from those in B2C markets, e.g. price negotiations (Stanton, 1981) and purchases by a buying center (Bonoma, 1982), many behavioral characteristics are present across diverse contexts. This leads to the assumption that there are "fundamental similarities within human choice-making" (Wilson, 2000, p. 781) in B2B and B2C markets and that many behavioral pricing theories in B2C markets could be applicable to B2B markets as well (Monroe et al., 2015). Up to date, only Larson et al. (2014) investigated the impact of price endings on the demand in a B2B context. The authors found that 9-ending and 0-ending prices strongly affect the demand for telecommunication services. Their findings also indicate 0-ending prices to have a higher impact on the demand than 9-ending prices. Based on their findings, they conclude that positive price thresholds also exist in B2B markets. As there are no further studies analyzing the impact of price endings on B2B products, this study addresses this research gap by investigating the frequency of price end-

ings for a highly complex chemical B2B product in order to answer the question whether or not B2C price ending theories may also be applicable to B2B markets due to similarities within human behavior (Monroe et al., 2015; Wilson, 2000). Previous research has shown that price setters in B2C markets frequently use 0-, 5-, and 9-endings, which is in parts consistent with the results of Larson et al. (2014). Therefore, the following hypotheses are proposed for price endings in B2B markets:

Hypothesis 1a: Dominant price endings are present in B2B markets.

Hypothesis 1b: The price endings are not evenly distributed.

Hypothesis 2: The most frequently used price endings in B2B markets are 0-, 5-, and 9-endings.

3 Method and data

This study uses an exploratory approach. The frequency of occurrence of price endings in a B2B market is investigated by means of complex chemical products. These B2B products are so-called "beads", i.e. spherical, non-porous, monodisperse nano- and microparticles, which are mainly used in biomedical applications (Bi et al., 2009; Cha et al., 2009; Dunbar, 2006; Liu et al., 2009; Safarik and Safarikova, 2009; Seydack, 2005; Ugelstad et al., 1993; Vignali, 2000). Due to their variety in functionality and the usage for highly specialized applications, small niche markets exist. In order to provide consistency, this analysis only takes those beads into consideration that consist of commonly used bulk materials. Such bulk materials are polymers (e.g. polymethyl methacrylate or polystyrene) and silica (Bake and Walt, 2008; Chen et al., 2006; Kang et al., 2006; Yalçın et al., 2006). Other (inorganic) materials are not considered.

Price negotiations are a common practice in B2B markets (Stanton, 1981). Due to different reference prices, price negotiations can lead to variations in the agreed price (Moosmeyer et al., 2012). To avoid biases, only internet-based catalog prices are sampled for this analysis.

Previous studies mainly focused on price endings in cents but research indicates that price ending effects occur as well for endings in dollar (Larson et al., 2014; Lee et al., 2009; Levy et al., 2007). Thus, this study analyzes price endings in dollars and cents.

A total of 6,724 prices were sampled from 9 US companies – a representative sample in view of the fact that the US bead market only consists of a few

Table 2 Selected empirical studies on price ending theories in B2C contexts, adapted from Lee et al. (2009), p. 132f.

Study	Theories	Findings
Anderson, Schindler (2003)	PIE, UEE	<ul style="list-style-type: none"> Use of 9-ending prices increases customer demand 9-ending effect is context-dependent
Blattberg, Wisniewski (1987)	PIE, UEE	<ul style="list-style-type: none"> Use of 9-ending prices increases customer demand
Dalrymple, Haines (1970)	PIE	<ul style="list-style-type: none"> Odd prices are positively related to sales
Dodds, Monroe (1985)	PIE, QIE	<ul style="list-style-type: none"> No effect of price ending on perceived quality, perceived value, and willingness to buy
Ginzberg (1936)	PIE	<ul style="list-style-type: none"> Inconsistent results on sales effects of odd prices
Huston, Kamdar (1996)	PIE, UEE	<ul style="list-style-type: none"> Number of digits is positively related to 9-endings Opposing results to price image effects
Lambert (1975)	UEE	<ul style="list-style-type: none"> No significant underestimation results Lower prices illusions associated with odd prices
Lee et al. (2009)	PIE, QIE, RIA	<ul style="list-style-type: none"> Use of 9-ending prices increases customer demand 9-ending prices signal low quality No significant correlation between number of digits in prices and 9-endings
Naipaul, Parsa (2001)	PIE, QIE	<ul style="list-style-type: none"> Firms and customers use price endings as signal of quality and value of products
Schindler (1984)	UEE	<ul style="list-style-type: none"> Poorer memory for odd prices than for even prices Odd prices indicate no recent price increase and low price image
Schindler, Kibarian (1996)	PIE, QIE	<ul style="list-style-type: none"> 99-ending prices signal low price image and discounts 99-endings have negative effect on quality image
Schindler, Kibarian (2001)	PIE, UEE	<ul style="list-style-type: none"> Use of 99-endings leads to increased customer purchasing
Schindler, Kirby (1997)	PGE, UEE	<ul style="list-style-type: none"> 9-ending prices are less frequent in longer prices More use of 9-ending prices for price types where relative potential underestimation is higher
Schindler, Wiman (1989)	UEE	<ul style="list-style-type: none"> Underestimation of odd prices rather than round prices Customers may process only leftmost price digit
Stiving (2000)	QIE	<ul style="list-style-type: none"> More round prices for higher quality products and high-priced firms
Stiving, Winer (1997)	PIE, QIE, UEE	<ul style="list-style-type: none"> Left-to-right processing of digits in a price Opposing implications of prices and quality images in 9-ending prices
Thomas, Morwitz (2005)	UEE	<ul style="list-style-type: none"> Underestimation effect happens when customers compare two prices and the prices being compared are close to each other

Note: PIE (price image effect theory), QIE (quality image effect theory), UEE (underestimation effect theory), PGE (perceived gain effect theory), RIA (rational inattention theory).

competing companies. The prices were exactly coded as listed in the internet catalog of each company. The advertised prices ranged from \$50.00 to \$8,872.50¹ and the mean value of the whole sample was \$422.56. Table 3 provides an overview of the descriptive statistics of this data set.

4 Results and discussion

As shown in table 4, the rightmost digits of bead prices are not evenly distributed among the 10 possibilities ($\chi^2(9) = 49,760; p < 0.001$). As the "Total" row of table 4 shows, the ending 0¢ is greatly over-represented with 92%. Furthermore, 6 of 9 companies are solely using 0¢ endings for bead prices. The other 9 possible price endings for the rightmost digit are underrepresented and account

together for only 10%. Although the 5¢ ending occurs solely for 5% of the prices, it is the second highest frequency of occurrence within this sample. An explanation for this result could be the 100% use of this price ending by the company Phosphorex. One company uses a 9¢ ending price but to a negligible percentage which becomes not evident within the table due to rounding. This result deviates from the findings of Lee et al. (2009) although the price level is as well between \$100 and \$1,000 for all companies. For products priced above \$100, they find that 28% of the prices end with 0¢, 21% with 5¢, and 25% with 9¢, respectively. In their study, the use of the price ending 0¢ increases for products above \$1,000. Thus, the price ending strategies of companies within the present study seem to be different. One possible explanation for this obser-

Table 3 Descriptive statistics for internet-based catalog prices of beads-selling US companies.

Company	Data points	Mean price (\$)	Std. Dev. (\$)	Min. price (\$)	Max. price (\$)
Bangs Laboratories, Inc.	1,757	783.10	894.25	70.00	4,817.00
Life Technologies, Inc.	271	454.54	621.86	134.07	8,872.50
Polyscience, Inc.	542	395.35	372.13	93.00	3,074.00
Magsphere, Inc.	725	374.09	350.22	85.00	2,000.00
Sigma-Aldrich Corp.	124	351.41	157.24	115.50	1,080.00
Spherotech, Inc.	643	313.46	381.90	100.00	4,200.00
Corpuscular, Inc.	1,432	287.25	110.42	74.00	982.80
Phosphorex, Inc.	348	211.21	123.19	54.95	499.95
Cospheric LLC	882	143.69	70.71	50.00	595.00
Total	6,742	422.56	565.10	50.00	8,872.50

¹ It is not expedient to consider the quantities corresponding to the prices (often stated in g or ml) as the exclusive focus of this study is on price endings, so that quantities do not have to be comparable.

vation might be the already described strong tendency to use round endings, particularly 0¢, for high prices, potentially in order to signal higher quality (quality image effect) (Stiving, 2000). In addition, Stiving (2000) found that this relationship is even stronger when the customer does not know the true level of quality prior to the purchase, which is the case for beads due to their high technological complexity.

Table 5 shows the frequency distribution of the last two digits in cents within the sample. As expected, also the last two cent digits of bead prices are not equally distributed among all 100 possibilities ($\chi^2(99) = 432,015$; $p < 0.001$). As illustrated in the "Total" row of table 5, the 00¢, 50¢, and 95¢ price endings are overrepresented, reflected by 80% for 00¢, 8% for 50¢, and 5% for 95¢, respectively. The other price endings are accounting for 7%. Companies examined in this study show a strong tendency to use especially 00¢ ending prices. In contrast, only the company Phosphorex prices all beads with 95¢ endings. The company Life Technologies follows an entirely different pricing strategy, 23% of the bead prices end with an unusual price ending of 48¢ and solely 9% show a 00¢ ending.

The frequency distribution of price endings in dollar is reported in table 6, clearly indicating that the last digits of bead prices in dollar are unevenly distributed among the 10 possibilities ($\chi^2(9) = 1,752$; $p < 0.001$). The \$0 and \$5 price endings are overrepresented (29% and 19%, respectively). The companies Magsphere, Spherotech, and Corpuscular use the \$0 ending for over 50% of their prices, whereby Magsphere and Spherotech almost solely use \$0 and \$5 price endings. This overrepresentation of \$0 and \$5 price endings could be explained by the high cognitive accessibility of those two digits. By using the 0- and 5-ending prices, price setters can simplify the communication with their customers, which might in turn increase the opportunity that customers perceive and recall the advertised prices. In addition, one reason for the lower frequency of \$5 price endings in comparison to \$0 price endings might be that 5-ending prices have a lower cognitive accessibility than 0-ending prices (Schindler and Kirby, 1997). Furthermore, the \$9 price ending is also comparably often used, accounting for 11%. Contrary to the other companies, Phosphorex and Cospheric apply the \$9 ending most frequent (64% and 25%, respectively). Furthermore, Phosphorex solely uses \$9 and \$4 endings and the 95¢ ending for the last two digits of the bead prices, leading to a focus on prices which are below a round denomination (e.g. \$149.95 or \$199.95) in their pricing strategy (Huston and Kamdar, 1996). This prevalence of \$0, \$5, and \$9 price endings is partially consistent with the findings of Larson et al. (2014). They

found that 0- and 9-ending prices increase the demand within a B2B context, but \$5 ending prices had no significant positive impact in their study.

The last frequency distribution considered concerns the last two dollar digits (table 7). Again, the last two digits of the bead prices are not equally distributed among the 100 possibilities ($\chi^2(99) = 3,586$; $p < 0.001$). The most frequent used price ending is \$50, accounting for 5.5%. Rank 2 is occupied by the \$99 ending accounting for 4.4%, while the \$00 ending ranks fifth (3.7%). The company Cospheric uses the \$9 ending for 25% of their prices. For the last two digits in dollar terms, almost 25% of their prices end with \$99, which leads to the conclusion that nearly all \$9 prices endings are simultaneously \$99 price endings. Therefore, this company also has a strong tendency to use prices which are below a round denomination (e.g. \$99.00) (Huston and Kamdar, 1996).

In sum, the results show that there are dominant price endings for US bead prices and that the analyzed price endings are not evenly distributed. Thus, there is strong support for hypothesis 1a and 1b. While the \$0, \$5, and \$9 price endings were shown to be predominant for the last digit in dollar, this is only true for the 0¢ ending with regard to the last cent digit. Therefore, hypothesis 2 is only partially supported. This strong tendency to use 0-ending prices and especially the 00¢ price ending for a B2B product shows that most of the B2B price setters in this study strongly believe in the (positive) effects of round price endings (as suggested by the quality image effect theory and cognitive accessibility theory). Exceptions in this study are the companies Phosphorex and Cospheric. They focus on prices which are below a round denomination (e.g. \$149.95, \$99.00) and are thus rather trusting in the perceived gain effect, underestimation effect, price image effect or the rational inattention effect. All of those effects provide a possible explanation for the frequent use of the price ending 9.

Nevertheless, there are dominant price endings indicating the existence of price thresholds in B2B markets. Especially for \$0, \$5, and \$9 ending prices, positive price threshold effects are suggested, but these findings are only partly consistent with the results of Larson et al. (2014) who found positive threshold effects for \$0 and \$9 ending prices within the B2B context. Because of the appearance of similar dominant price endings in B2C and B2B contexts, this study found strong support that B2C price ending theories may also be applicable to the B2B context. The observations made are strengthened as similar dominant price endings emerge when conducting the same analysis for the German market.

Table 4 Frequency distribution of the last cent digit of US bead prices.

Company	Mean price (\$)	Data points	Last digit in cent (%)											
			0¢	1¢	2¢	3¢	4¢	5¢	6¢	7¢	8¢	9¢		
Bangs Laboratories	783.10	1,757	100	0	0	0	0	0	0	0	0	0	0	0
Life Technologies	454.54	271	21.4	0.7	10.0	1.8	7.4	3.0	21.0	0.4	34.3	0	0	0
Polyscience	395.35	542	100	0	0	0	0	0	0	0	0	0	0	0
Magsphere	374.09	725	100	0	0	0	0	0	0	0	0	0	0	0
Sigma-Aldrich	351.41	124	100	0	0	0	0	0	0	0	0	0	0	0
Spherotech	313.46	643	100	0	0	0	0	0	0	0	0	0	0	0
Corpuscular	287.25	1,432	99.2	0	0	0	0	0.5	0.1	0	0.3	0	0	0
Phosphorex	211.21	348	0	0	0	0	0	100	0	0	0	0	0	0
Cospheric	143.69	882	100	0	0	0	0	0	0	0	0	0	0	0
Total	422.56	6,724	91.5	0	0.4	0.1	0.3	5.4	0.9	0	1.4	0	0	0

Note: Frequencies greater than 10% appear in bold.

Table 5 Frequency distribution of the last two digits of US bead prices in cents.

Rank	Bangs Laboratories	Life Technologies	Polyscience	Magsphere	Sigma-Aldrich	Spherotech	Corpuscular	Phosphorex	Cospheric	Total
1	00¢ 100%	48¢ 23.2%	00¢ 100%	00¢ 100%	00¢ 58.1%	00¢ 100%	00¢ 81.0%	95¢ 99.7%	00¢ 53.5%	00¢ 80.2%
2	n/a	36¢ 12.9%	n/a	n/a	50¢ 31.5%	n/a	50¢ 4.0%	99¢ 0.3%	50¢ 46.5%	50¢ 7.6%
3	n/a	00¢ 8.9%	n/a	n/a	60¢ 4.0%	n/a	90¢ 2.9%	n/a	n/a	95¢ 5.2%
4	n/a	28¢ 5.9%	n/a	n/a	70¢ 2.4%	n/a	10¢ 2.4%	n/a	n/a	48¢ 0.9%
5	n/a	24¢ 5.5%	n/a	n/a	80¢ 2.4%	n/a	60¢ 2.2%	n/a	n/a	90¢ 0.7%
Mean price (\$)	783.10	454.54	395.35	374.09	351.41	313.46	287.25	211.21	143.69	422.56

Table 6 Frequency distribution of the last digits of US bead prices in dollar.

Company	Mean price (\$)	Data points	Last digit in dollar (%)									
			\$0	\$1	\$2	\$3	\$4	\$5	\$6	\$7	\$8	\$9
Bangs Laboratories	783.10	1,757	9.3	16.3	1.5	16.2	5.9	17.4	13.5	5.5	6.1	8.3
Life Technologies	454.54	271	12.2	9.6	28.0	6.3	6.6	4.4	9.2	1.1	5.9	16.6
Polyscience	395.35	542	16.4	14.9	9.8	11.1	3.5	8.1	12.7	7.9	7.9	7.6
Magsphere	374.09	725	59.6	0	0	0	0	0	38.6	0	1.8	0
Sigma-Aldrich	351.41	124	4.8	12.9	21.8	8.9	12.1	10.5	5.6	9.7	8.9	4.8
Spherotech	313.46	643	54.4	0	0	0	0	0	45.4	0.2	0	0
Corpuscular	287.25	1,432	51.3	3.0	2.0	3.3	3.9	12.6	10.6	6.3	2.7	4.3
Phosphorex	211.21	348	0	0	0	0	35.6	0	0	0	0	64.4
Cospheric	143.69	882	12.4	0	3.4	0	0.6	18.4	0	17.2	22.7	25.3
Total	422.56	6,724	28.5	6.7	3.6	6.2	5.1	19.2	7.3	5.9	6.4	11.1

Note: Frequencies greater than 10% appear in bold.

Table 7 Frequency distribution of the last two digits of US bead prices in dollar.

Rank	Bangs Laboratories	Life Technologies	Polyscience	Magsphere	Sigma-Aldrich	Spherotech	Corpuscular	Phosphorex	Cospheric	Total
1	\$55 8.2%	\$72 24.4%	\$33 8.7%	\$50 18.1%	\$32 9.7%	\$40 11.0%	\$10 10.1%	\$09 25.9%	\$99 24.8%	\$50 5.7%
2	\$46 5.8%	\$99 8.5%	\$31 6.5%	\$00 13.0%	\$22 8.9%	\$55 10.7%	\$50 7.7%	\$49 16.4%	\$48 22.4%	\$99 4.4%
3	\$31 5.7%	\$71 5.9%	\$40 4.8%	\$25 7.4%	\$51 4.8%	\$35 8.6%	\$00 6.1%	\$74 13.5%	\$97 17.1%	\$55 3.8%
4	\$03 5.4%	\$30 5.2%	\$91 4.8%	\$15 7.2%	\$84 4.0%	\$25 8.1%	\$90 6.1%	\$24 11.2%	\$25 14.7%	\$25 3.7%
5	\$11 4.7%	\$24 4.8%	\$65 4.2%	\$75 7.0%	\$03 3.2%	\$00 7.9%	\$56 5.7%	\$69 6.6%	\$50 9.4%	\$00 3.7%
Mean price (\$)	783.10	454.54	395.35	374.09	351.41	313.46	287.25	211.21	143.69	422.56

5 Conclusion and Outlook

This study depicted the landscape of price endings by analyzing the frequency of their occurrence on cent and dollar level for a highly complex chemical product. The results show that price setters particularly use \$0, \$5, \$9 and 00¢ endings. Based on the assumption that price setters favor prices and price endings contributing to achieving their demand goals, this indicates positive price thresholds effects for these price endings. These price endings are similar to the dominant endings found in previous B2C studies. This finding is thus supporting the assumption that B2C price ending theories may also be applicable in the B2B context. The results particularly indicate the transferability of the cognitive accessibility theory to the B2B context. At the same time, it can be assumed that the quality image effect might be an explanation for the frequent use of the price ending 0. In addition, two companies frequently used 9-ending prices which rather support the existence of the perceived gain effect, underestimation effect, price image effect or the rational inattention effect. Thus, further research is required.

It should be noted that there are some limitations to this study. The analysis assumes that price setter favor prices that influence demand goals positively, so that the existence of positive price thresholds effects was only indirectly investigated. However, most dominant price endings are consistent with the results of Larson et al. (2014) and previous B2C studies. Furthermore, only catalog prices were investigated. Because price negotiations are common practice in B2B context (Stanton, 1981), it is unclear how far the sampled prices are true selling prices. Since this study focused on prices above \$100, further research should also include cheaper B2B products as different price levels have found to lead to different frequencies in using price endings in B2C studies (Lee et al., 2009).

In managerial practice, the primary focus of B2B pricing is and will be set on the economic analysis. However, behavioral and psychological aspects should not be neglected in pricing decisions due to violations of rational choice-making principles by B2B customers (Hinterhuber, 2015). Based on this study and results of Larson et al. (2014), positive price thresholds effects may exist in B2B context. Then, specific price endings are able to increase the demand and should thus be considered in B2B pricing tactics.

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