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Pricing orientation, pricing capabilities, and firm performance

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Abstract

Purpose – How do pricing methods affect firm performance? From both an academic as well as a managerial perspective this question is important. The literature is silent on the relationship between pricing approach and company performance. The aim of this paper is to address this research gap.

Design/methodology/approach – To address this practical and theoretical deficit, the authors surveyed 1,812 professionals involved in pricing to measure the influence of pricing approach on firm performance.

Findings – The authors find a positive relationship between value-based pricing (but not competition-based pricing) and firm performance. Furthermore, the authors find that the three pricing orientations differently influence firm pricing capabilities, which in turn are positively related to firm performance. This paper is thus the first paper documenting a positive relationship between value-based pricing and firm performance through a quantitative research design.

Originality/value – These findings have important theoretical as well as practical implications and suggest that all firms, regardless of size, industry or geography, benefit from value-based pricing.

Keywords Pricing, Pricing orientation, Pricing capabilities, Firm performance, Value-based pricing, Performance management

Paper type Research paper

1. Introduction

Although pricing is a key element in firm profitability, research on it is comparatively limited: “price is so important to the firm’s success, one wonders why pricing has not received more attention” (LaPlaca, 1997). Within the broad research domain of pricing, the topic of pricing strategy has witnessed only a recent increase in interest, albeit from a low level (Leone *et al.*, 2011): The current literature examines the antecedents of pricing strategies (Noble and Gruca, 1999a; Myers *et al.*, 2002), the impact of pricing objectives on pricing practices (Avlonitis *et al.*, 2005; Diamantopoulos and Mathews, 1994), the adoption and internalization of value-based pricing (Hinterhuber and Liozu, 2012a; Liozu *et al.*, 2012) and the relationship between pricing strategies and new product success (Ingenbleek *et al.*, 2003; Ingenbleek *et al.*, 2010). However, one important question remains unexamined: the relationship between pricing approach and firm performance.

This lack of research on the relationship between pricing methods and firm performance is puzzling. Value-based pricing is slowly gaining in popularity. Many companies such as Allstate, ARDEX, GE, Johnson & Johnson, and others are rapidly embracing and internalizing value-based pricing (Hinterhuber and Liozu, 2012b).



However, despite being considered as an advanced and modern pricing approach (Noble and Gruca, 1999b), only 17 percent of firms use it as a primary primary approach (Hinterhuber, 2008a). This begs the question: Does value-based pricing indeed lead to higher profitability? This question is not trivial: Although prior research has stressed the superiority of value-based pricing over other approaches (Cannon and Morgan, 1990; Monroe, 1990), current research clearly suggests that the implementation of value-based pricing is costly (Liozu *et al.*, 2012). The implementation of value-based pricing requires a new organizational mindset (Forbis and Mehta, 1981), a different organizational structure and other changes which have non-zero costs. It is thus by no means evident that financial benefits of value-based pricing exceed the organizational costs of implementation.

Second, pricing capabilities play an increasing role for companies. Jeff Immelt, CEO of General Electric, stresses the need to build companywide capabilities in pricing to drive profits:

A good example is what we're doing to create discipline around pricing . . . When it comes to the prices we pay, we study them, we map them, we work them. But with the prices we charge, we're too sloppy (Stewart, 2006).

He then continues: "In a deflationary world, you could get margin by working productivity; now, you need marketing to get a price" (Stewart, 2006). More generally, researchers have documented that an increasing number of companies invests to build pricing capabilities (Dutta *et al.*, 2002). Also here we need to ask the question: do pricing capabilities lead to superior profitability? So far academic research has not offered conclusive answers to these two questions.

We use three quantitative surveys yielding a total of 1,812 respondents in marketing, sales, pricing, and top management to examine the relationship between pricing approach, pricing capabilities, and firm performance: In doing so we build on the current literature, which classifies pricing strategies into cost-, competition-, and customer value-based approaches (Shapiro and Jackson, 1978; Ingenbleek *et al.*, 2003; Cavusgil *et al.*, 2003; Cunningham and Hornby, 1993). This paper is thus the first to test the relationship between pricing approach and firm performance. Managerial implications are twofold: first, the more a firm engages in customer-value-based pricing, the better it performs; second, there is a positive relationship between pricing capabilities and firm performance. This paper thus contrasts with Ingenbleek *et al.* (2010), who did not find a direct effect of value-based pricing on performance. The difference in numbers of survey respondents (Ingenbleek *et al.*, 2010: 145 respondents; this survey: 1,812 respondents) and in the dependent variable (Ingenbleek *et al.*, 2010: new product performance; this survey: firm performance) may account for the difference in results.

2. Theoretical foundation

This research study draws on the literature on the resource-based theory of the firm and on research on marketing and pricing capabilities: on the grounds of earlier conceptual work (Hitt and Ireland, 1986; Penrose, 1959; Wernerfelt, 1984), Barney (1991a) offered a comprehensive framework linking resources to sustained competitive advantage and performance. Subsequent scholars argued that in addition to resources, capabilities play a fundamental role in enabling competitive advantage and superior profitability, where capabilities are defined as a special type of resource "whose

purpose is to improve the productivity of the other resources possessed by the firm” (Makadok, 2001). According to RBV, the possession of unique capabilities is a core prerequisite for creating sustained value. While literature is rich with regards to strategic and marketing capability, only a few papers have addressed the creation and development of pricing capabilities and made the empirical connection to their impact on performance.

2.1 Pricing

Six decades ago Edwards (1952), an economist at the London School of Economics, investigated the price-setting process at British companies and described two interviews with directors of manufacturing companies. One director observed, “If we know that a competing model is selling at £X and our features are worth a little bit more, we can say that the maximum price that we are likely to be able to obtain for our product is £X plus £Y” (Edwards, 1952, p. 302); interested readers will note the close resemblance between this definition of customer willingness to pay and Nagle and Holden’s (2002) definition of economic value to the customer. The second director Edwards (1952) interviewed commented that “there are a great many factors entering into price-fixing and of these far and away the most important is the price the customers are willing or can be induced to pay” (Edwards, 1952, p. 303).

Shortly thereafter, Backman (1953) observed, “the graveyard of business is filled with the skeletons of companies that attempted to base their prices solely on costs.” Since then, it has been the conventional wisdom that value-based pricing increases performance (Cannon and Morgan, 1990; Ingenbleek *et al.*, 2003; Monroe, 1990), whereas cost-based pricing leads to suboptimal profitability (Kortge and Okonkwo, 1993; Myers *et al.*, 2002; Piercy, 1981).

Empirical tests of these propositions, however, are rare: “little research is available that addresses the value of one pricing strategy over another” (Myers, 2004). The following studies address this question, albeit with inconclusive results.

In a study of 404 US exporting firms, Cavusgil *et al.* (2003) found the largest cluster, composed of firms relying on cost-plus pricing, to be highly profitable and to be perceived by managers as successful; the authors also identified a second highly profitable cluster of firms that relied on demand-related information for pricing purposes and that avoided cost-plus pricing approaches. Myers (2004) found that pricing strategies – classified as volume-, profitability-, or market-share-oriented – that were congruent with overall venture goals were more profitable than pricing strategies with weak congruence. Ingenbleek *et al.* (2003, 2010), finally, examined the relationship between pricing strategy and new product success. Our first research question thus is: What is the relationship between pricing strategy and firm profitability? In other words: do pricing methods affect company profitability?

2.2 Capabilities and the resource-based view of the firm

The RBV of the firm is an emerging perspective in strategic management that explains firm performance in terms of internal resources and capabilities. The positive relationship between firm resources and firm profitability is well established by now, both conceptually (Stoelhorst and Van Raaij, 2004) and empirically (Ortega, 2010; Wu, 2010).

Dutta *et al.* (2003) highlighted the role of pricing capabilities, defined as a set of complex routines, skills, systems, know-how, coordination mechanisms, and

complementary resources, in increasing company performance. Pricing capability refers to, on the one hand, the price-setting capability within a firm (identifying competitor prices, setting pricing strategy, translating from pricing strategy to price) and, on the other, to the price-setting capability *vis-à-vis* customers (convincing customers on price-change logic, negotiating price changes with major customers). In this and subsequent qualitative-research settings, pricing capabilities were found to be positively related to firm performance (Berggren and Eek, 2007; Dutta *et al.*, 2002; Dutta *et al.*, 2003; Hallberg, 2008). So far, we lack quantitative studies that explore the relationship between pricing capabilities and company performance. Our second research question thus is: Do pricing capabilities lead to superior profitability?

3. Research method

Our methodological foundation rests on the combination of three separate empirical studies conducted in 2011 with support from three professional organizations: the Professional Pricing Society, the Young Presidents' Organization International, and the Strategic Account Management Association. These professional organizations were selected on the basis on their global representativeness in their respective fields, their extended network, the quality of the membership basis and their overall reputation with practitioners. All three organizations were contacted at the time of the individual study preparation to request permission to access their network. All three organizations supported the research inquiries by launching multiple e-mail communications to their members and by assisting with the measurement of communication statistics. All three demonstrated exemplary commitment to academic research and to bridging theory and practice in the field of pricing.

The three studies were conducted from March through July 2011 and included a total of 1,812 complete responses on a common set of constructs.

3.1 Sample and data collection

3.1.1 Survey 1: pricing, marketing and business professionals. We used the membership list of the Professional Pricing Society (PPS) as the sample frame for our study. This organization is the world's largest professional body dedicated to the education and networking of pricing managers. Survey recipients were pricing and marketing managers involved in managing pricing activities for their firms. The president of the organization endorsed our study by outlining his personal support and encouraging member responses to our survey, which the organization distributed electronically in April 2011 to their database of approximately 18,300 members. All respondents were assured of anonymity, both individually as well as for their company; all received a cover letter explaining the practitioner and academic nature of the research; and all were advised that they would have access to the survey results and analysis on completion of the study, as well as an option to enter into a raffle to win a prize. Responses were returned over an eight-week period. About 300 "bounced" and were assumed not to have reached the intended recipients. Of the remaining 18,000 surveys, a total of 1,148 were returned partially or fully completed, for a response rate of 6.4 percent. We determined 748 to be usable for analysis. Our response rate is consistent with those for surveys of large professional organizations whose members are typically not asked to complete academic surveys.

3.1.2 Survey 2: CEOs and business owners. Following the total design method (Dillman *et al.*, 2009), a cross-sectional self-administered electronic survey was sent to 7,897 active members of the Young Presidents' Organization International (YPO), a for-profit organization with 18,000 business owner/executive members in 110 countries. Members must meet eligibility criteria, such as age (under 45), title (president, chief executive officer, chairman of the board, managing director, and/or managing partner), enterprise value (minimum \$10 million USD), number of employees (minimum 50), and annual sales revenues (minimum \$8 million for sales, service and manufacturing corporations; \$160 million for financial institutions; and \$6 million for agency-type businesses). To our knowledge, no other empirical studies have used this database so far.

Of the 7,897 targeted surveys e-mailed, 376 were returned as undeliverable. Of the remaining 7,521, a total of 902 surveys were returned partially or fully completed, for a response rate of 12 percent, a rate consistent with those for previous surveys of upper-echelon executives (Hambrick *et al.*, 1993; Simsek *et al.*, 2010). The final number of usable surveys was 557.

3.1.3 Survey 3: account and sales management professionals. The Strategic Account Management Association (SAMA), a professional organization dedicated to the education and networking of strategic account managers around the world, supported our research by providing access to their database of active members, distributing the survey electronically, and following up with non-respondents. The survey was e-mailed to 7,200 members in June 2011. Responses were returned over a six-week period. About 200 "bounced" and were assumed not to have reached the intended recipients. Of the remaining 7,000, a total of 723 surveys were returned partially or fully completed for a response rate of 10.3 percent. We determined 507 to be usable for further analysis.

3.2 Measure development and assessment

Although most scale items were adapted from those in the existing literature and modified slightly to reflect our focus, we developed a new scale to measure firm pricing capabilities. Content and face validity were determined through a comprehensive review of the literature, pre- and pilot tests, and assessment by a panel of practitioners and academics to ensure that measurement items covered the domain of the constructs (Churchill, 1979; Nunnally, 1978). To assess the quality of the survey items, we conducted in-depth, face-to-face interviews with pricing practitioners using Bolton's (1993) "talk aloud" methodology. We pre-tested all scale items with a small panel of academics and pricing and business practitioners. A pilot test involving 150 professionals from both manufacturing and service industries provided 70 complete responses. The survey was iteratively modified to incorporate all relevant test results. None of the pre-test or pilot-test participants was included in the final sample. The survey instrument is shown in the Appendix (Table AI).

3.3 Pricing orientation

To gauge a firm's pricing orientation, we adapted the scales developed by Ingenbleek *et al.* (2003) to measure value-based pricing (five items), competition-based pricing (six items), and cost-based pricing (five items). Items were measured using a seven-point Likert scale anchored at the extremes by 1 (not at all taken into account in price-setting) and 7 (very much taken into account in price-setting).

3.4 Pricing capabilities

Since there was little empirical precedent for measuring pricing capabilities we developed a multiple-item scale in accordance with an operational definition (Kerlinger and Lee, 1999) by relying on our qualitative work and on extant literature. We used 12 items ranging from 1 (much worse than competitors) to 7 (much better than competitors) to operationalize this scale.

3.5 Firm performance

We measured firm performance by asking respondents to compare their firms' relative performance with that of their competitors on eight different dimensions for the previous year (growth in sales, return on investment, return on sales, and so forth) using a scale ranging from 1 (much worse than competitors) to 7 (much better than competitors). The use of subjective performance measures is warranted for a number of reasons: since firms in our sample are from many geographical zones, a multidimensional measure based on perceptual firm performance facilitates comparisons across firms and contexts, such as across industries, time horizons, and economic conditions (Song *et al.*, 2005). In a recent study, Kumar *et al.* (2011) found a high correlation (0,8) between subjective and objective data on firm performance, which further supports their validity (Dess and Robinson, 1984). In addition, researchers expressed strong reservations about the use of objective performance data specifically in research settings involving small and medium-sized companies, since these data could be biased as a result of managerial manipulation for corporate and personal tax reasons (Sapienza *et al.*, 1988). Finally, subjective performance measures are widely used in research on strategy (Anderson and Paine, 1975; Galbreath and Galvin, 2008; Gruber *et al.*, 2010; Lau, 2011; Ortega, 2010; Spanos and Lioukas, 2001) and marketing (Kohli and Jaworski, 1990; Narver and Slater, 1990; Olavarrieta and Friedmann, 2008).

3.6 Firm-level control variables

To account for sample heterogeneity, to rule out alternative explanations, and to mitigate omitted-variable problems, we controlled for a number determinants of performance by including demographic characteristics of the firm, such as firm main activity (manufacturing, service, retail), firm size (number of employees) (Amburgey and Rao, 1996), and geography.

4. Analysis and results

We used a combination of IBM SPSS Statistics 19 and IBM AMOS 19 software packages to carry out the analyses. We examined the univariate skewness and kurtosis of the variables and found them to be within acceptable levels. All multivariate statistical assumptions (multivariate normality, homoscedasticity, linearity, and multicollinearity) for using the structural equation modeling (SEM) technique were met.

4.1 Measurement models

An exploratory factor analysis (EFA) was conducted on the sample dataset to determine whether the items, particularly those for the new scales, reliably measured its intended construct. Factor analysis results confirmed the existence of five factors,

with each item loading on its respective factor in support of unidimensionality (Anderson and Gerbing, 1988). Summary statistics for our EFA are shown in Table I, and intercorrelations of the study constructs are presented in Table II.

We assessed the psychometric properties of the 5 factors derived from the EFA using a confirmatory factor analysis (CFA) to validate the factor structure. The measurement model results, shown in Table III, indicate that the standardized regression weights are greater than 0.52 and that all are statistically significant ($p < 0.001$), which indicates convergent validity (Bagozzi *et al.*, 1991). That all of the variables loaded at levels greater than 0.40 on the expected factors also indicates convergent validity (Bagozzi, 1994). Furthermore, without exception, the composite reliability (CR) for each construct exceeds the commonly used norm for acceptable psychometrics (>0.70). Discriminant validity is supported if the average variance extracted (AVE) exceeds the squared correlations between all pairs of constructs. As shown in Table III, all constructs met this requirement, suggesting sufficient discriminant validity. AVE was observed to exceed the Average Squared Variance (ASV) and Maximum Squared Variance (MSV) in all cases except two, providing further evidence of discriminant validity.

The overall fit for the model, shown in Table IV, met the conventional standards and is considered acceptable as represented by the following: $\chi^2/d.f. = 2.956$, root mean square error of approximation [RMSEA] = 0.033, normed fit index [NFI] = 0.966, non-normed fit index [NNFI] = 0.971, incremental fit index [IFI] = 0.977, and comparative fit index [CFI] = 0.977.

Table I.
Construct summary statistics

Construct	Number of items	Loadings	Cronbach Alpha
Pricing capabilities	9	0.552; 0.525; 0.526; 0.652; 0.647; 0.843; 0.664; 0.815; 0.819	0.895
Relative performance	8	0.617; 0.731; 0.787; 0.571; 0.584; 0.819; 0.862; 0.836	0.897
Value-based pricing	5	0.696; 0.829; 0.826; 0.842; 0.773	0.887
Cost-based pricing	5	0.692; 0.710; 0.650; 0.673; 0.688	0.808
Competition-based pricing	6	0.838; 0.780; 0.753; 0.784; 0.835; 0.698	0.904

Table II.
Intercorrelations of the study constructs

Constructs	Cronbach Alpha	Pricing capabilities	Relative performance	Value-based pricing	Cost-based pricing	Competition-based pricing
Pricing capabilities	0.895	<i>0.49</i>				
Relative performance	0.897	0.527	<i>0.5</i>			
Value-based pricing	0.887	0.520	0.429	<i>0.61</i>		
Cost-based pricing	0.808	0.348	0.257	0.365	<i>0.46</i>	
Competition-based pricing	0.904	0.259	0.170	0.409	0.332	<i>0.54</i>

Notes: Italicised values are on the diagonal are the AVEs and all correlations are significant at $p < 0.001$

Constructs and corresponding items	Cronbach Alpha	Mean	Standard deviation	Standardized regression weights	Standard error	Critical ratio	Composites reliability	Average variance extracted	Maximum shared variance	Average shared variance
Pricing capabilities (PC)	0.895									
PC1		4.51	1.493	0.721	0.057	20.766	0.87	0.49	0.38	0.25
PC3		4.85	1.283	0.818	0.032	30.035				
PC6		4.52	1.487	0.725	0.038	26.406				
PC7		4.37	1.404	0.726	0.037	25.023				
PC8		4.21	1.434	0.656	0.037	23.682				
PC10		4.21	1.539	0.625	0.042	21.108				
PC12		4.47	1.497	0.618	0.041	20.766				
Relative performance (RP)	0.897									
RP2		4.99	1.234	0.662	0.033	23.714	0.88	0.50	0.38	0.16
RP3		5.11	1.291	0.647	0.046	22.295				
RP4		4.75	1.245	0.651	0.05	19.92				
RP5		4.66	1.343	0.729	0.054	22.097				
RP6		5.08	1.294	0.735	0.054	21.487				
RP7		4.91	1.268	0.749	0.052	22.54				
RP8		4.98	1.324	0.781	0.053	23.714				
Value-based pricing (VBP)	0.887									
VB1		5.37	1.431	0.772	0.029	32.227	0.89	0.61	0.34	0.22
VB2		5.29	1.461	0.763	0.03	31.767				
VB3		5.31	1.497	0.760	0.032	30.276				
VB4		5.15	1.383	0.837	0.027	36.242				
VB5		5.08	1.529	0.775	0.033	32.227				
Cost-based pricing (CBP)	0.808									
CB1		5.15	1.633	0.695	0.058	17.922	0.81	0.46	0.15	0.13
CB2		4.89	1.788	0.605	0.049	20.244				
CB3		4.64	1.681	0.764	0.073	16.112				
CB4		5.60	1.440	0.657	0.050	17.456				
CB5		5.02	1.645	0.662	0.054	17.922				
Competition-based pricing (COBP)	0.904									
COB2		5.04	1.591	0.616	0.049	17.378	0.85	0.54	0.23	0.13
COB3		4.89	1.623	0.783	0.035	31.836				
COB4		5.27	1.425	0.797	0.031	32.202				
COB5		5.54	1.342	0.672	0.037	21.329				
COB6		5.26	1.447	0.796	0.068	17.378				

Table III.
Measurement model results

Our data were collected three times, in three different contexts. In each case, the same survey constructs were administered. Sections of the survey were rotated, as were items within the sections. We conducted a Levene’s test of homogeneity to determine whether the variances and distributions for the variables in our combined dataset were consistent across these multiple survey samples. The results of the test show that significant differences exist among the three datasets; therefore, they cannot be combined. To account for this phenomenon, we have included the three studies as moderating variables under the term “Nature of Respondents (CEO, pricing professionals, account managers).” Despite differences in variance and distribution, we may find a commonality among the relationships between the variables, regardless of the sample context.

4.2 Structural model

SEM was particularly appropriate because it allows estimation of multiple associations, simultaneously incorporates observed and latent constructs in these associations, and accounts for the biasing effects of random measurement error in the latent constructs (Medsker *et al.*, 1994). The SEM results are shown in Table IV. The model fit measures indicated acceptable agreement with the covariance in the data: $\chi^2/d.f.$ = 1.504, root mean square error of approximation [RMSEA] = 0.017, normed fit index [NFI] = 0.997, non-normed fit index [NNFI] = 0.997, incremental fit index [IFI] = 0.999, and comparative fit index [CFI] = 0.999.

4.3 Direct effects on dependent variables

First, all three pricing orientations had a positive and significant influence on pricing capability, albeit at different levels: value-based pricing ($b = 0.536, p < 0.01$), cost-based pricing ($b = 0.205, p < 0.05$), and competition-based pricing ($b = 0.044, p < 0.05$) (see Table V). Our findings reveal the superior influence of a value-based pricing orientation on pricing capabilities.

Second, the hypothesized impact of pricing capabilities on relative firm performance ($b = 0.666, p < 0.01$) was also highly significant. Similarly, value-based pricing had a positive and significant relationship with relative firm performance ($b = 0.122, p < 0.01$). Competition-based pricing, however, had a negative significant influence on relative firm performance ($b = -0.133, p < 0.01$). The final research model shown in Figure 1 displays the direct causal relationships between constructs.

4.4 Analysis of moderation

Because of the results we obtained from our homogeneity test when assembling the data set, we tested for moderation by study type. Our results indicate that nature of

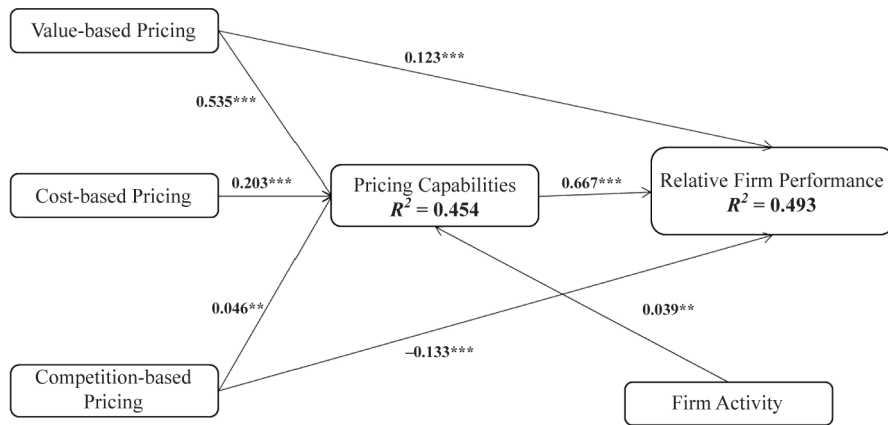
Model fit measures	Threshold	CFA model	Structural model	References
Chi-Square/Df		945.846/320	10.529/7	
<i>p</i> -value	<0.05	0.000	0.161	
CMIN/DF	<2	2.956	1.504	Tabachnick and Fidell (2007)
PCFI	>0.5	0.77	0.25	Hu and Bentler (1999)
CFI	>0.95	0.977	0.999	Hu and Bentler (1999)
RMSEA	<0.06	0.033	0.017	Hu and Bentler (1999)
Pclose	>0.5	1.00	1.00	Jöreskog and Sörbon (1993)

Table IV.
Summary of fit statistics

Hypothesis	Hypothesized paths	Regression estimates	Standardized estimate	Critical ratio	Hypothesis supported
H1	Value-based pricing positively influences pricing capabilities	0.493	0.536***	25.550	Yes
H2	Cost-based pricing positively influences pricing capabilities	0.212	0.205**	10.265	Yes
H3	Competition-based pricing positively influences pricing capabilities	0.042	0.044**	2.083	Yes
H4	Value-based pricing positively influences relative firm performance	0.072	0.122***	5.194	Yes
H5	Competition-based pricing negatively influences relative firm performance	-0.081	-0.133***	-6.175	Yes
H6	Pricing capabilities positively influences relative firm performance	0.427	0.666***	30.232	Yes
H7	Nature of respondents moderates the relationship between value-based pricing and pricing capabilities		CEO = 0.399*** PPS = 0.563*** SAMA = 0.595***		No
H8	Nature of respondents moderates the relationship between cost-based pricing and pricing capabilities		CEO = 0.255*** PPS = 0.183*** SAMA = 0.190***		No
H9	Nature of respondents moderates the relationship between competition-based pricing and pricing capabilities		CEO = -0.003(ns) PPS = 0.087		Yes
H10	Nature of respondents moderates the relationship between pricing capabilities and firm performance		SAMA = 0.018(ns) CEO = 0.647*** PPS = 0.734***		No
H11	Nature of respondents moderates the relationship between value-based pricing and firm performance		SAMA = 0.573*** CEO = 0.106*** PPS = 0.065**		Yes
H12	Nature of respondents moderates the relationship between competition-based pricing and firm performance		SAMA = 0.236*** CEO = -0.113*** PPS = -0.124*** SAMA = -0.182***		No

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; R square relative firm performance = 0.454; R square pricing capabilities = 0.494

Table V.
Structural model



Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Figure 1.
Final research model

respondents does not moderate the relationship between value-based pricing, cost-based pricing, and pricing capabilities. However, nature of respondents did moderate the relationship between competition-based pricing and pricing capabilities. Results of the survey of Professional Pricing Society members revealed a positive significant relationship between competition-based pricing and pricing capabilities ($\gamma = 0.087, p < 0.01$). This phenomenon was not observed with the other two pricing orientations.

Similarly, nature of respondents did not moderate the relationship between value-based pricing and relative firm performance or the relationship between competition-based pricing and relative firm performance. Our results revealed a moderation in the strength of the relationship between value-based pricing and relative firm performance among PPS respondents. For these respondents, the relationship was significant at the 90 percent confidence level, and the standardized regression weight was 0.065. For the respondents from the CEO study, the relationship was significant at the 99 percent confidence level, and the standardized regression weight was 0.106. For SAMA respondents, the relationship was significant at the 99 percent confidence level, and the standardized regression weight was 0.226.

4.5 R-squared decomposition

All hypothesized latent variables related to relative firm performance had a positive and significant relationship with it. The decomposition of the relative firm performance R-squared of 0.455 revealed that pricing capabilities explained 77 percent of its variance, whereas value-based pricing explained only 12 percent of it (see Table VI).

Similarly, the decomposition of the R-squared for pricing capabilities (0.494) revealed the strong contribution of value-based pricing (56 percent) and cost-based pricing (14 percent) in explaining its total variance. Competition-based pricing explained only 2 percent of the variance.

4.6 Controls

Most of our control variables were not significant, except for firm activity ($b = 0.039, p = 0.049$), which had a positive effect on pricing capabilities.

Independent variable	Dependent variable	Correlations	Standardized estimates	Portion of variance explained by IV (%)
<i>Relative firm performance R square decomposition = 0.455</i>				
Pricing capabilities	Relative performance	0.525	0.666	77
Value-based pricing	Relative performance	0.429	0.122	12
Competition-based pricing	Relative performance	0.17	-0.132	-5
Controls	Relative performance			17
Total				100
<i>Pricing capabilities R square decomposition = 0.494</i>				
Value-based pricing	Pricing capabilities	0.52	0.536	56
Cost-based pricing	Pricing capabilities	0.348	0.205	14
Competition-based pricing	Pricing capabilities	0.259	0.044	2
Controls	Pricing capabilities			27
Total				100

Table VI.
R-squared decomposition
for our dependent
variables

5. Conclusion

To date, we have only anecdotal evidence on the benefits of value-based pricing: Zantac, a me-too anti-ulcer drug, was launched at a price premium of 20 percent-100 percent reflecting its value to customers in different markets at the insistence of Glaxo's CEO, who overruled other constituencies in marketing and sales arguing for competition-based pricing at a discount *vis-à-vis* the then market leader Tagamet (Pitt *et al.*, 1997). As a result of a pricing and marketing strategy centered on customer value, the launch of Zantac is still regarded as one of the most successful pharmaceutical product launches ever: peak sales exceeded US \$ 4.3 billion. Mainly as a result of Zantac, accounting for close to half of company sales, Glaxo became the most profitable company in any industry in the decade from 1985 to 1995. In a different industry setting, a focus on value-based pricing significantly contributed towards the turnaround of Clariant, a Swiss specialty chemical company: The company's operating profitability was negative in 2002 (-2,2 percent of sales) and reached industry leading levels of 10 percent in 2010, largely as a result of the emphasis of the CEO, Jan Secher, on pricing as key profit driver. Jan Secher deemphasized the company's traditional focus on volume and stressed the need to "increase prices based on our added value" (Secher, 2006).

Interesting as these and other case studies may be, they provide only anecdotal support for the benefits of value-based pricing. The objective of our study is to move away from anecdotal evidence towards rigorous, quantitative research. By combining three different datasets employing the same theoretical constructs, we surveyed 1,812 respondents in pricing, marketing, sales, key account management, and top management. Our respondents are 748 members of the Professional Pricing Society,

507 members of the Strategic Account Management Association and 557 members of the Young Presidents' Organization International. Our integrative multi-study research approach allows us to reach the conclusion that pricing capabilities positively and significantly influence relative firm performance. For the time, the construct of pricing capabilities was empirically validated through robust academic research and the relationship between pricing capabilities and firm performance was established through robust statistical analysis.

6. Discussion

Marketing scholars posit that value-based pricing is a superior approach to setting prices. Monroe (1990) states:

[...] the profit potential for having a value-oriented pricing strategy that works is far greater than with any other pricing approach.

Cannon and Morgan (1990) recommend perceived-value pricing where profit maximization is the objective: "Perceived value pricing enables a company to select an optimal price/volume combination." Other researchers concur (Anderson and Narus, 2004; Cressman, 1999). These statements have received, until now, no empirical support. The implementation of value-based pricing has non-zero costs (Hinterhuber, 2008b; Liozu *et al.*, 2012). The question whether value-based pricing leads to superior performance is thus non-trivial. It is, at least theoretically, very much possible that the costs of the required changes at actor, activity and resource level exceed the benefits. In other words, the implementation of value-based pricing could very well lead to increased revenues or gross margins (or both), but the increase in fixed expenses (e.g. training) could very well lead to lower company profits.

Counter-intuitively we find no such effects. We find that value-based pricing is positively linked to firm performance, and that competition-based pricing is negatively linked to firm performance. These results thus provide strong empirical support that value-based pricing is positively correlated with profitability, regardless of company size, industry or nationality. This finding is very significant: Small and medium-sized companies predominantly use competition-based pricing approaches (Cunningham and Hornby, 1993). Companies operating in highly competitive industries typically use competition-based pricing approaches – clearly against the statement in the practitioner literature that a true commodity does not exist (Forsyth *et al.*, 2000). Similarly, companies in Asia use competition-based pricing approaches to a significantly larger degree (Chia and Noble, 1999) than companies in the USA (Noble and Gruca, 1999a). Our data suggest that all companies – i.e. also small and medium-sized companies, companies operating in commodity industries and companies in Asia – will significantly improve profitability by implementing value-based pricing.

From a managerial perspective these data thus clearly suggest that there are no excuses to value-based pricing. Company size (e.g. "we are too small to be able to afford value-based pricing"), industry (e.g. "we operate in a commodity industry, value-based pricing will not work"), geography (e.g. "we operate in Asia where competition-based pricing is predominant"), or other reasons (e.g. "all our competitors use cost-based pricing") may lead companies to select cost-or competition-based pricing; our empirical data do not support any of these rationales: value-based pricing will increase performance regardless of size, industry or geography.

Finally, value-based pricing does not imply “charging higher prices for the same products or services” (Rüdiger, 2004); rather, it implies understanding and increasing customer willingness to pay across market segments, communicating customer value (as opposed to product features), aligning prices (upwards and downwards) with differences in value perceptions across segments, understanding and influencing customer price elasticity, and, finally, identifying ways to profitably address differences in customer willingness to pay. For companies selling differentiated products at premium prices, value-based pricing is the most profitable pricing strategy (Nagle and Holden, 2002), whereas cost- or competition-based pricing leads to prices which are either too high or too low.

We further find a strong relationship between pricing capabilities and firm performance. In this respect, we thus contribute to the RBV. Dutta *et al.* (2003) examine the role of pricing capabilities. In this and subsequent qualitative-research settings, pricing capabilities are positively related to company performance (Berggren and Eek, 2007; Dutta *et al.*, 2002; Dutta *et al.*, 2003; Hallberg, 2008). The marketing-capability literature uses quantitative surveys to document a positive link between pricing capabilities – a sub-set of marketing capabilities – and firm performance (Morgan *et al.*, 2009; Vorhies and Morgan, 2005). These and other surveys – see, for example, Kemper *et al.* (2011) – use the following scale to define pricing capabilities:

- (1) using pricing skills and systems to respond quickly to market changes;
- (2) learning about competitors’ pricing tactics;
- (3) pricing products/services effectively; and
- (4) monitoring competitors’ prices and price changes.

Subsequent studies (e.g. Zou *et al.*, 2003) used a substantially similar scale ((1) responding quickly to competitors’ pricing tactics, (2) using pricing skills to respond quickly to any customer change, and (3) communicating pricing structure and levels to customers) and confirmed the relationship between pricing capabilities and performance, in this case the performance of Chinese exporters.

All these studies measure pricing capabilities as part of a much wider sub-set of marketing capabilities: in parallel, these studies measure capabilities related to product development, channel management, market communication, selling, market information management, marketing planning, and marketing implementation (Vorhies and Morgan, 2005), as well as other capabilities. The construct “pricing capabilities” in marketing-capability literature is a somewhat crude one with a limited number of measurement items. In other words, use of a three- or four-item scale of pricing capabilities may risk underestimating the complexity of pricing capabilities in firms.

In the present study we aim to capture the complexity of pricing capabilities by using a much richer, 12-item scale which incorporates capabilities in price-setting, capabilities in price realization, and capabilities related to pricing processes and systems. The positive relationship we find between pricing capabilities and firm performance thus contributes further to empirical tests on the RBV, which so far have yielded mixed results overall (Armstrong and Shimizu, 2007, Newbert, 2007, 2008).

From a managerial perspective, our data thus provide support for the statement that investments into pricing capabilities lead to superior profitability. The significant

investments into pricing capabilities at, for example, General Electric (Comstock *et al.*, 2010) thus appear justified by increased performance. Other companies are thus well advised to consider investing specifically into pricing capabilities. These capabilities encompass price-setting, price-negotiation, value- and price-communication and pricing processes.

7. Limitations

This study has limitations which offer potentially fruitful future research avenues. The performance measures used in this research are perceptual, although the use of perceptual or subjective data has been advocated in the strategic management literature (Dess and Robinson, 1984). The broad response base of respondents in different functions (pricing, marketing, sales, general management) does indicate that the findings may be representative of the overall population of firms globally; nevertheless, we cannot exclude a selection bias.

Like all studies using cross-sectional data, causality is a concern (Echambadi *et al.*, 2006). We motivate the hypothesized relationships between pricing approaches and firm performance by prior theoretical (Monroe, 1990) as well as empirical studies (Ingenbleek *et al.*, 2003); furthermore, we motivate the hypothesized relationships between pricing capabilities and firm performance by the substantial body of research the RBV has produced (Dutta *et al.*, 2002). Nevertheless, future longitudinal studies are warranted to improve the robustness of our findings.

Because our survey was a self-administered questionnaire, results may not reflect what respondents actually do when managing the pricing process. Babbie (2007) observed that “Surveys cannot measure social action: they can only collect self-reports of recalled past action or of prospective or hypothetical action.” In other words, to truly understand how organizational and behavioral dynamics affect the pricing process and how pricing decisions are made in firms, it may be necessary to augment our results with field observations and qualitative inquiry.

Finally, no statistical test can ensure a bias-free analysis (Podsakoff *et al.*, 2003). Although efforts were taken to minimize common method bias, it would have been preferable to have more representation from each respondent company and to use different objective measures for the dependent variables. Recognizing the difficulties of this, we used an “informed observer” approach to best represent the actions within the boardroom.

8. Implications for practice and future research

Our findings have implications for both pricing practice and pricing research. With regard to pricing practice, an increasing number of B2B and B2C companies aim to implement value-based pricing. In parallel, numerous handbooks provide guidance for designing and implementing value-based pricing (see, for example, Baker *et al.*, 2010). The implementation of value-based pricing is clearly not costless. Our first contribution to pricing practice is the empirical demonstration that value-based pricing contributes positively to firm performance. We also show that cost-based pricing is not conducive to firm performance. Our second contribution to pricing practice concerns the documentation of a positive relationship between pricing capabilities and firm performance. Pricing capabilities are indeed strategic, as suggested by Dutta *et al.* (2002): pricing capabilities encompass a resource and activity

configuration that is valuable, rare, difficult to imitate, non-substitutable, and embedded in the firm's organization and which thus enables a firm to build a competitive advantage and to achieve superior profitability as a result of pricing activities (Barney, 1991b). Pricing managers are thus well advised to invest in pricing capabilities in order to improve firm performance: this investment may encompass investments in price-setting capabilities, price-negotiation capabilities, value- and price-communication capabilities, and pricing processes and systems.

Opportunities for future research include identifying factors that are contingent on the relationship between pricing capabilities and firm performance; in addition, an understanding of the antecedents of pricing capabilities would improve our theoretical as well as our practical understanding of how firms can build and deploy idiosyncratic pricing capabilities.

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Items

Pricing capabilities (PC)

- PC1 Using pricing skills and systems to respond quickly to market changes
- PC2 Knowledge of competitors' pricing tactics
- PC3 Doing an effective job of pricing products/services
- PC4 Monitoring competitors prices and price changes
- PC5 Sticking to price list and minimizing discounts
- PC6 Quantifying customers' willingness to pay
- PC7 Measuring and quantifying differential economic value versus competition
- PC8 Measuring and estimating price elasticity for products/services
- PC9 Designing proprietary tools to support pricing decisions
- PC10 Conducting value-in-use analysis or Total Cost of Ownership
- PC11 Designing and conducting specific pricing training programs
- PC12 Developing proprietary internal price management process

Relative performance (RP)

- RP1 Acquisition of new customers
- RP2 Increase of sales to current customers
- RP3 Growth in total sales revenues
- RP4 Absolute price levels
- RP5 Pricing power in the market
- RP6 Business Unit profitability
- RP7 Return on sales (ROS)
- RP8 Return on investment (ROI)

Value-based pricing (VBP)

- VB1 Advantages of the product compared to competitors' products/services
- VB2 Customer perceived value of the products/services
- VB3 Customer willingness to pay for the unique benefits of the product/services
- VB4 Balance between advantages of products/services and price
- VB5 Differentiated value drivers of our products/services compared to substitutes

Cost-based pricing (CBP)

- CB1 Variable costs of products/services
- CB2 Price necessary to break-even
- CB3 Investments in products/services
- CB4 Target margin guidelines
- CB5 Target return on sales levels

Competition-based pricing (COBP)

- COB1 Price of competitors' products/services
- COB2 Competitors' current price strategy
- COB3 Likelihood of competitors' strength to react
- COB4 Market structure (number and strength of competitors)
- COB5 Degree of competition on the market
- COB6 Competitive advantage of competitors in the market

Table AI.
Survey items