1 Pricing objectives and strategies: a cross-country survey

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Abstract
This chapter reports the results of a descriptive study on pricing objectives and strategies based on a survey among managers in three countries (USA, India and Singapore). The survey instrument was developed using a conceptual framework developed after an analysis of the extant literature on pricing objectives, strategies and factors that influence the choice of pricing strategies. Data were collected on firms' utilization of 19 possible pricing strategies, pricing objectives and various pricing determinants. The responses were used to estimate logit models of choice of pricing strategies. The results reveal interesting differences among the three countries as well as the use of different strategies. The implications of this descriptive study for guidance of pricing are discussed.

1. Introduction

Pricing is the only element of the marketing mix that brings revenues to a firm. While there are extensive theories/models of how a firm should price its goods and services, descriptive research on how firms make their pricing decisions is sparse in the literature. One may argue that descriptive research can help model builders in developing more realistic models for pricing. Various researchers in the past have been concerned about the practice of pricing and the degree to which it departs from theory. Yet our understanding of the pricing processes is still in its infancy.

The present chapter attempts to contribute to the descriptive pricing literature by not only examining the problem across various industries and countries, but also accounting for the effect of another important element of the pricing decision: the company/product conditions, market conditions, and competitive conditions that influence the pricing strategy adopted by the firm (collectively labeled as 'pricing strategy determinants' by Noble and Gruca, 1999). To complete the analysis, we also consider another element that can play a part in influencing pricing decisions, namely demographic characteristics of the firms in question as well as those of the individuals within the firms. In the sections that follow, we review extant descriptive research on pricing, present a conceptual framework that illustrates how firms determine their choice of pricing strategy, and describe the results of an empirical study that we conducted in three countries to assess the applicability of the framework.

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2. Selected review of past research

Descriptive research on how firms decide on the specific strategies[1] of pricing is quite limited in the literature. Table 1.1 summarizes the main findings of seven studies beginning with the one by Hall and Hitch (1939) and ending with Avlonitis and Indounas (2005). All of these studies utilized either mail questionnaires and/or personal interviews to obtain data from samples of managers with a view to determining their pricing and profit objectives while pricing their products and services.

Table 1.1 A summary of past studies on pricing objectives and strategies of firms

Author(s)	Date	Objectives of the study	Methodology employed	Some findings
Hall and Hitch	1939	To determine the way business executives decide what price to charge for their products	Use of a questionnaire and lengthy interviews among 38 business executives	Ten of the firms used conventional or full cost policy in setting prices, and methods for computing full cost varied among the firms. A large fraction of firms do not adopt the principle of marginal revenue equals marginal cost in setting prices. Firms take competitor reaction into account while pricing their products.
Lanzillotti	1958	To determine the pricing objectives of a sample of large US industrial firms	Postprandial research – lengthy interviews conducted at two points in time among officials of firms	Several pricing objectives such as achieving a target rate of return, stabilization of price and margin, realizing a target market share, and meeting or preventing competition were uncovered in this study.
Shipley	1981	To determine pricing and profit objectives of British manufacturing firms	Use of a mail questionnaire sent to a stratified sample of sales and marketing directors listed in KOMPASS; responses obtained from 728 firms	General finding that there is a considerable heterogeneity of pricing and profit objectives that vary with size and number of competitors. Firms pursue a multiplicity of objectives while pricing their products. One-third of the firms do not list profit objective.
Samiee	1987	To examine the role of pricing in marketing plans of US- and	Mail survey among 104 US- and 88 foreign-based companies	While there are differences in the role of pricing among the two groups of firms, pricing decisions are found to be more centrally made

[1] In the literature, the term 'pricing method' is sometimes used in place of the term 'pricing strategy'. For example, Oxenfeldt (1973), Diamantopoulos and Mathews (1995) and Avlonitis and Indounas (2005) use the former while articles such as Tellis (1986) and Noble and Gruca (1999) adopt the latter. In this chapter, we use both terms interchangeably.

Table 1.1 (continued)

Author(s)	Date	Objectives of the study	Methodology employed	Some findings
		foreign-based companies operating in the USA as well as how pricing decisions are made and the objectives for pricing	and personal interviews among executives from 12 such companies	in the US-based companies. Pricing objectives are found to be similar; the major objectives are: satisfactory ROI, maintenance of market share, reaching a specified profit goal, seeking largest market share, and profit maximization.
Jobber and Hooley	1987	To examine pricing objectives for both manufacturing and service companies, differences by stage of market evolution, size of the firm, and the relationship between pricing objectives and performance	Mail survey among 1775 members of the UK Institute of Marketing; questionnaire developed using interviews among 150 executives	Pricing objectives are found to vary by stage of market evolution and size of the firm. For example, maximization of current sales revenues is found to be more important for emerging/new markets as compared to growth markets. Profit maximization and market share attainment/maximization were similar by stage of the market evolution. Small and medium-sized firms used profit maximization as pricing objective more than large firms. Both positive and negative relationships between pricing objectives and performance were found.
Noble and Gruca	1999	To organize the existing theories of pricing and to determine which factors account for the use of specific strategies	Based on extensive literature search, a questionnaire was constructed and administered to 270 managers in industrial firms in the USA. The researchers developed logistic regression models that relate the strategy choices to a variety of factors deemed relevant to pricing strategy.	In general, the authors found that managers' pricing strategy choices are consistent with normative pricing research. This conclusion applies to four specific stets of pricing strategies: new product pricing, competitive pricing, product line pricing and cost-based pricing.

Table 1.1 (continued)

Author(s)	Date	Objectives of the study	Methodology employed	Some findings
Avlonitis and Indounas	2005	To explore the association between pricing objectives and strategies in the services sector	Personal interviews involving 170 companies from six different service sectors in Greece. Logistic regression was used to assess the impact of pricing objectives on the adopted strategies.	The key pricing objectives adopted are fundamentally qualitative in nature and determined with customers' needs and satisfaction in mind, but the pricing strategies used tend to be firm-centric, with the cost-plus method and pricing according to average market prices adopted by most of the firms.

To illustrate, the study by Lanzillotti (1958) utilized personal interviews among officials of a purposive sample of 20 large US corporations and attempted to understand various goals pursued by their pricing policies. He found that these firms had a varied set of goals such as increasing market share, maintenance of market share, achieving a 'fair' return on investment, achieving a minimum rate of return, stabilization of prices, and matching competitor prices. Noble and Gruca (1999) adopted the same basic approach and developed a comprehensive list of factors that affect the choice of pricing strategies of firms. Further, they developed statistical relationships (*à la* the logit model) between the choice of a pricing strategy and a number of determinants of that choice. They identified the factors using normative pricing research and other conjectures about the determinants. More recently, Avlonitis and Indounas (2005) explored the relationship between firms' pricing objectives and their corresponding pricing strategies in the services sector using a sample of 170 Greek companies and found clear associations between specific strategies and objectives.

Several researchers have studied the issue of price stickiness, which is broadly related to that of pricing strategies. The question here is how often firms change prices of products and services they offer. A significant example of this research theme is the extensive study by Blinder et al. (1998), who use interviews among executives to understand why prices are sticky in the US economy; their conclusions are that price stickiness is the rule and not an exception, and that business executives do not adjust prices based on macroeconomic considerations. There is some ongoing work by Bewley (2007), who is conducting interviews among business executives to look at the issue of price stickiness; he reaches a somewhat opposite conclusion that price rigidity is far from being the rule and that prices for a large volume of trade are flexible. In contrast to the studies based on interviews, Lien (2007) analyzes micro-data at the firm level reported in quarterly surveys in Switzerland and concludes that inclusion of macroeconomic variables adds only marginally to the explanatory power of a price adjustment probability model that includes firm-specific variables. A similar study is reported by Cornille and Dossche (2006), who use Belgian data on firm-level prices reported for the computation of the Producers' Price Index and find that one out of four Belgian prices changes in a typical month.

While these studies have offered a number of insights into how firms set prices, more empirical research needs to be done to better understand the price-setting process and, in particular, the relationship between firms' pricing objectives, pricing strategies and other elements of the pricing decision. Indeed, Avlonitis and Indounas (2005) state that their extensive review of the literature revealed a lack of any prior work investigating the potential association between a firm's pricing objectives and pricing methods, and that their work is a first attempt at studying this issue empirically within the context of the service industry. The present chapter attempts to further close this gap in the pricing literature by studying how firms' pricing strategies may be affected by their pricing objectives and various firm, market, and competitive conditions. The study was done on firms operating in three countries (USA, India, and Singapore) across a variety of industries and also examines the relationship between the firms' pricing strategies and selected demographic characteristics of the firm.

3. Conceptual framework for pricing decisions

In general, the factors that affect a firm's choice of a pricing strategy can be classified under two broad categories: the pricing objectives of the firm, and pricing strategy determinants. The latter refers to the various company/product conditions, market and customer (consumer) conditions, and competitive conditions that may influence the pricing strategies adopted. In addition, because the data on pricing choices of firms are usually collected by the survey method from managers, certain demographic characteristics of the individual respondents will also matter. Figure 1.1 shows the conceptual framework we adopt in this chapter. It follows the approach of Noble and Gruca (1999), and develops statistical relationships between the choice of a pricing strategy and various relevant factors. Unlike Noble and Gruca (1999), however, in addition to examining the relationship between pricing strategy determinants and the choice of strategy, our framework also looks into the effect of pricing objectives as well as respondent and firm characteristics (such as the respondent's degree of influence in pricing decisions and the size of the firm) on the pricing strategy adopted.

We established our list of possible pricing objectives for the firm based on Diamantopoulos and Mathews (1995, ch. 5). Based on extensive empirical evidence obtained over a two-year period from an in-depth study of a large, oligopolistic manufacturing firm in the medical supplies industry, the authors developed a comprehensive list of possible objectives that managers may seek to accomplish through their pricing decisions. Next, we developed our list of pricing strategy determinants based on the comprehensive outline given in Noble and Gruca (1999). In addition to the determinants studied by the authors, we extended the list to include a number of other determinants relevant to the pricing decision. The complete list of pricing objectives and pricing strategy determinants is given in our empirical study in the next section. Finally, we developed our list of 19 possible pricing strategies which the firm can adopt (for both consumer and industrial markets) through a detailed review of the pricing strategy literature, in particular Tellis (1986) and Noble and Gruca (1999). These strategies[2] cover a variety of possible pricing situations such as competitive

[2] Some of these pricing strategies raise legal issues, but such a discussion is beyond the scope of this chapter; see Nagle and Holden (2006) for discussion.

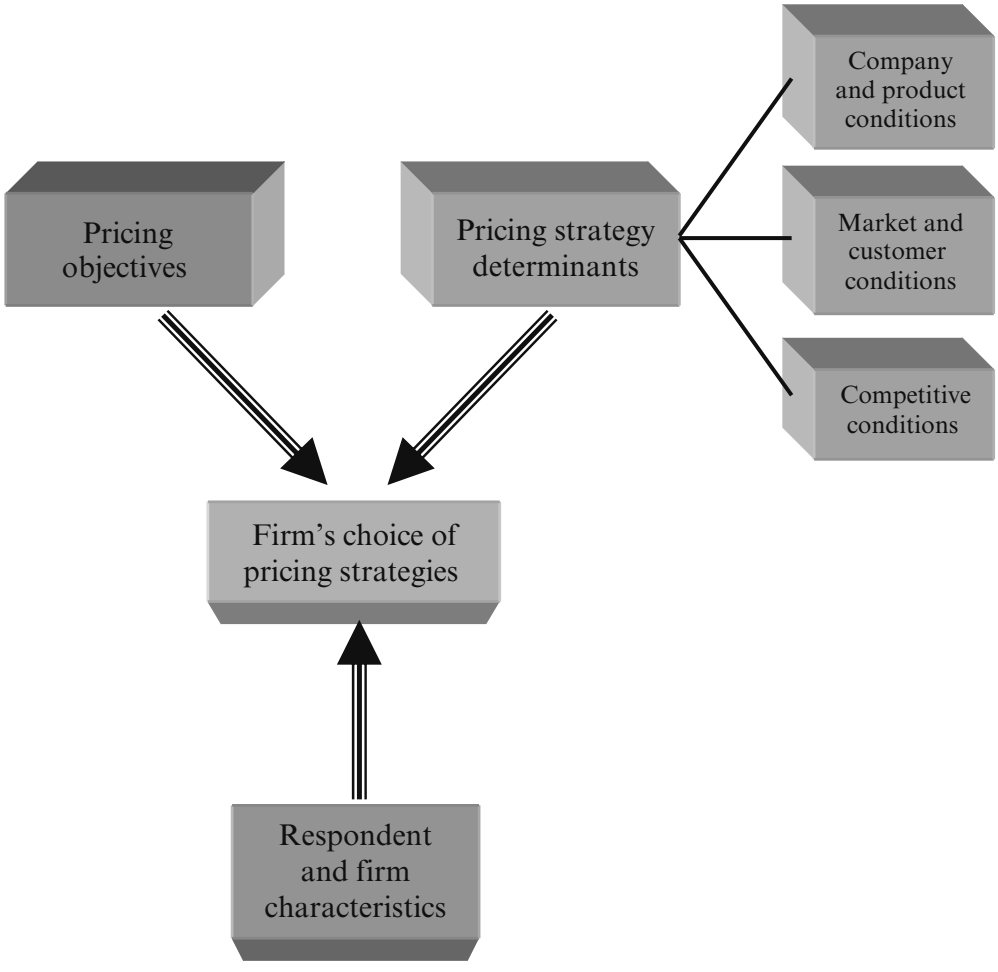

Figure 1.1 The pricing decision: a framework for analyzing a firm's choice of pricing strategies

pricing, cost-based pricing, new product pricing, product line pricing, geographic-based pricing and customer-based pricing. Descriptions of these strategies are given in Table 1.2. One 'new' strategy that we have included, which has not been extensively looked at in the pricing strategy literature, is Internet pricing. We define Internet pricing as the strategy of pricing a product differently on the firm's website compared to the firm's other sales outlets (for example, firms may price their products lower if consumers purchase them online and directly from the firm because of the reduction in costs obtained from not having to pay wholesale and retail margins), and can be thought of as a strategy of pricing differently across channels of distribution (with a focus on direct selling through the Internet). Our reason for including this pricing strategy stems from the increase in Internet commerce that has occurred over the last decade, and we expect this strategy to grow in importance as Internet usage and Internet commerce continue to increase across countries and markets.

Table 1.2 Pricing strategies and their descriptions

Pricing strategy	Description of strategy
1. Price skimming	We set the initial price high and then systematically reduce it over time. Customers expect prices to eventually fall.
2. Penetration pricing	We set the initial price low to accelerate product adoption.
3. Experience curve pricing	We set the price low to build volume and reduce costs through accumulated experience.
4. Leader pricing	We initiate a price change and expect other firms to follow.
5. Parity pricing	We match the price set by the overall market or price leader.
6. Low-price supplier	We always strive to have the lowest price on the market.
7. Complementary product pricing	We price the core product low when complementary items such as accessories, supplies and services can be priced higher.
8. Price bundling	We offer this product as part of a bundle of several products, usually at a total price that is lower than the sum of individual prices.
9. Customer value pricing	We price one version of our product at very competitive levels, offering fewer features than are available on other versions.
10. Cost-plus pricing	We establish the price of the product at a point that gives us a specified percentage profit margin over our costs.
11. Break-even pricing	We establish the price of the product at a point that will allow us to recover the costs of developing the product.
12. Price signaling	We use price to signal the quality of our product to customers.
13. Image pricing	We offer an identical version of the product at a higher price.
14. Premium pricing	We price one version of our product at a premium, offering more features than are available on other versions.
15. Second market discounting	We price this product at very competitive levels for the purpose of exporting or selling in secondary markets.
16. Periodic or random discounts	We periodically or randomly lower the price of this product.
17. Geographic pricing	We price this product differently for different geographic markets.
18. Perceived value pricing	We price this product based on our customers' perceptions of the product's value.
19. Internet pricing	We price this product differently on our Internet website compared to the price we charge through our other sales outlets.

Our review of the extant literature on descriptive, empirical pricing research suggests that ours is the first study that brings together all three key elements of the pricing decision: the pricing objectives, the pricing strategy determinants and, finally, the pricing strategies adopted. In a nutshell, pricing strategies are the means by which the firm's pricing objectives are to be achieved, while the determinants are the internal and external conditions faced by the firm that influence managers' choice of pricing strategies. Our aim is to obtain a more holistic view of the pricing decision, and provide a better understanding of the relationship between each key element of the decision. In addition, the fact that our study was conducted across a number of countries enables us to study any potential differences or similarities in pricing decisions made by firms in different countries. In the next section, we describe our empirical study in detail.

4. Empirical study

The study was conducted via a survey of firms operating in the USA, Singapore and India over a period of about a year beginning in November 2003. The cross-country survey was done primarily by mail and survey questionnaires were sent out to more than 600 firms in each country across a variety of industries. A total of 199 usable responses were obtained, of which 73 were from firms operating in the USA, 54 were from firms operating in Singapore, and 72 were from firms operating in India. The goals of the study were, first, to examine the applicability of our framework in describing the relationship between firms' pricing objectives, pricing strategy determinants and pricing strategies, and, second, to compare the firms' pricing decisions across different countries.

The survey covered products at different stages of the product life cycle (PLC) and spanned a number of different industries and product types. Given the nature of the method used, we cannot claim a representative sample of the population. But the results provide a snapshot of how firms make pricing decisions, as illustrated by the pricing strategies they adopted, their determinants, and the associated pricing objectives. In this section, we first provide a detailed summary of our survey and descriptive statistics of the survey results, and then describe our modeling approach for estimating the statistical relationships between pricing strategy choice and its determinants for several types of pricing strategies. We then present and discuss the results of our estimation and conclude by discussing some directions for future research.

4.1 Survey and descriptive statistics

In the survey, the respondents were first asked to name one primary product sold by their firm in the domestic market, provide some background information about the product, and answer all remaining questions in the survey with reference to only the named product. Information on the pricing strategies adopted for this product was then collected by asking the respondents to select up to five strategies from a given list of pricing strategies and to indicate the relative percentage importance of each selected strategy such that the total importance across all selected strategies summed to 100 percent. Next, the respondents were presented with a list of possible pricing objectives that their firm may seek to accomplish by adopting the selected pricing strategies and asked to rate the importance of each objective on a five-point scale. Following that, the respondents were presented with the list of pricing strategy determinants that may play a part in determining the kinds of pricing strategies adopted by the firm and asked to rate the degree to which each condition affects the pricing strategies adopted. Finally, the respondents were asked to provide some information on the profile of the firm and their professional experience.

Product profile The product information collected in the survey included the name of the product, the price of a unit of the product, the type of product (service or physical product), its stage in the PLC, the price of the product relative to the market, and whether the product was sold to businesses, end-consumers, or both. About 72 percent of the responses obtained were based on physical products, while the rest were based on service products such as financial services or business consultancy services. The products were mostly in the growth (37 percent) or maturity (54 percent) stages of the PLC, although these figures differed somewhat across countries. In terms of the price of the product

Table 1.3 Product profile (all figures in percentages)

	USA	Singapore	India	Full sample
Product type (% physical product)	60.3	68.5	87.5	72.4
Stage of the product life cycle				
Introduction	9.6	9.3	4.2	7.5
Growth	34.2	22.2	50.0	36.7
Maturity	54.8	66.7	43.1	53.8
Decline	1.4	1.9	2.8	2.0
Mean price of product relative to the market*	3.60	3.80	3.66	3.67
Product user				
Individual consumers or households	32.9	27.8	31.9	31.2
Businesses or organizations	42.5	44.4	26.4	37.2
Both	24.7	27.8	41.7	31.7

Note: * Price relative to market: 1 = 5% or more below the market; 2 = 1 to 4% below the market; 3 = same as the market; 4 = 1 to 4% above the market; and 5 = 5% or more above the market.

relative to the market, on a five-point scale where 1 = 5 percent or more below the market, 3 = same as the market, and 5 = 5 percent or more above the market, the sample mean was 3.67, suggesting that most of the products were priced at the same level as or slightly higher than the market. This phenomenon was consistent across all three countries, and the products concerned were distributed fairly evenly among consumer and business markets. Table 1.3 presents a summary of the product profiles.

Pricing strategies Each respondent was presented with the list of 19 pricing strategies encompassing a variety of pricing situations. The respondent was asked to select up to five pricing strategies from the list and to indicate the relative importance of each selected strategy such that they summed to 100 percent. For the sample as a whole, the most frequently used pricing strategy was cost-plus pricing (47.2 percent of firms), with a mean percentage importance of 37.8 percent. This was followed by price signaling (37.7 percent of firms, mean importance of 22.6 percent), perceived value pricing (34.2 percent of firms, mean importance of 33.1 percent), and parity pricing (31.7 percent of firms, mean importance of 36.9 percent). The least frequently used pricing strategies were Internet pricing (3 percent of firms, mean importance of 12.5 percent) and both break-even pricing (7.5 percent of firms, mean importance of 24.7 percent) and second market discounting (7.5 percent of firms, mean importance of 20 percent). In some cases, the frequency of usage and mean importance of certain pricing strategies varied considerably across countries. For example, only 9.7 percent of firms in India used perceived value pricing, while the figure was 52.1 percent in the USA and 42.6 percent in Singapore (the mean importance of perceived value pricing among firms that use this strategy, however, was fairly similar across countries and ranged from about 28 percent to 34 percent). Similarly, almost 42 percent of firms in India used parity pricing (mean importance of 43.2 percent), while

Table 1.4a Usage frequency (percentage of firms) and mean percentage importance of pricing strategies

Pricing strategy	Usage frequency (%)				Mean importance (%)			
	USA	S'pore	India	Full sample	USA	S'pore	India	Full sample
1. Price skimming	13.7	16.7	13.9	14.6	22.5	32.8	21.5	25.3
2. Penetration pricing	8.2	18.5	12.5	12.6	25.8	23.0	33.3	27.4
3. Experience curve pricing	12.3	9.3	11.1	11.1	21.1	32.0	30.6	27.0
4. Leader pricing	12.3	13.0	36.1	21.1	35.0	17.1	32.5	30.5
5. Parity pricing	23.3	29.6	41.7	31.7	35.5	26.6	43.2	36.9
6. Low-price supplier	5.5	9.3	6.9	7.0	27.5	28.0	32.0	29.3
7. Complementary product pricing	11.0	7.4	5.6	8.0	27.5	17.5	15.0	21.9
8. Price bundling	16.4	20.4	8.3	14.6	26.3	27.2	20.5	25.4
9. Customer value pricing	12.3	18.5	15.3	15.1	15.0	25.0	22.7	21.2
10. Cost-plus pricing	46.6	42.6	51.4	47.2	41.5	35.1	35.9	37.8
11. Break-even pricing	6.8	7.4	8.3	7.5	23.0	22.5	27.5	24.7
12. Price signaling	31.5	48.1	36.1	37.7	21.1	26.5	20.0	22.6
13. Image pricing	2.7	9.3	5.6	5.5	10.0	14.0	22.5	16.4
14. Premium pricing	31.5	24.1	29.2	28.6	24.9	21.5	22.6	23.3
15. Second market discounting	4.1	5.6	12.5	7.5	18.3	20.0	20.6	20.0
16. Periodic or random discounts	16.4	22.2	13.9	17.1	23.3	20.8	16.0	20.3
17. Geographic pricing	13.7	16.7	26.4	19.1	17.8	21.1	18.4	18.9
18. Perceived value pricing	52.1	42.6	9.7	34.2	34.3	32.8	27.9	33.1
19. Internet pricing	2.7	7.4	0.0	3.0	7.5	15.0	0.0	12.5
20. Other pricing strategies	15.1	5.6	6.9	9.5	54.3	53.3	47.0	52.2

Notes: The above table may be read as follows. As an example, consider price skimming. The column under 'USA usage frequency' shows that 13.7% of the US firms in the sample employ price skimming. Similarly, 16.7% of the Singaporean firms, 13.9% of the Indian firms and 14.6% of all the firms in the sample use price skimming. The column under 'USA mean importance' shows that on average, an importance rating of 22.5% is allocated to price skimming among US firms adopting this strategy (relative to any other pricing strategies that these firms also adopt). Likewise, the mean importance rating for price skimming is 32.8% for Singaporean firms, 21.5% for Indian firms and 25.3% for all firms in the sample employing this strategy. The percentages in each column do not add up to 100% because each firm can select between one to five different pricing strategies.

only about 30 percent of Singapore firms and 23 percent of US firms adopted this pricing strategy (with mean importance of 26.6 percent and 35.5 percent respectively). Detailed information on the usage frequency and mean importance of each pricing strategy are provided in Table 1.4a.

Table 1.4b shows the number (and percentage) of pricing strategies adopted (ranging

Table 1.4b Frequency and percentage of firms using multiple strategies

	USA	S'pore	India	Full sample
No. of firms employing 1 pricing strategy	5 (6.8%)	1 (1.9%)	3 (4.2%)	9 (4.5%)
No. of firms employing 2 pricing strategies	11 (15.1%)	9 (16.7%)	18 (25.0%)	38 (19.1%)
No. of firms employing 3 pricing strategies	20 (27.4%)	14 (25.9%)	13 (18.1%)	47 (23.6%)
No. of firms employing 4 pricing strategies	22 (30.1%)	13 (24.1%)	22 (30.6%)	57 (28.6%)
No. of firms employing 5 (or more) pricing strategies	15 (20.5%)	17 (31.5%)	16 (22.2%)	48 (24.1%)
Total	73 (100%)	54 (100%)	72 (100%)	199 (100%)

Note: * Figures in parentheses show the percentage of firms employing the stated number of pricing strategies as a percentage of the total for that column.

from one strategy up to five or more) by the firms in each country and across the entire sample. Less than 5 percent of firms in the sample employ only one pricing strategy, and indeed, more than half the firms in the sample employ at least four different pricing strategies for the (same) product which they were asked to consider in the survey.

Besides choosing from the given list of pricing strategies, the respondents were also given an option to describe any additional strategies used by their firm that were not part of the given list (about 10 percent of respondents provided such information, with these strategies having a mean importance of 52.2 percent). These strategies included strategies such as contract pricing (where a fixed price for a certain quantity of purchase is agreed upon between the firm and the customer), customer segment pricing (where prices charged depend on the profile or characteristics of the customer), channel member pricing (where prices depend on recommendations or requirements put forth by the firm's distributors in the supply chain), and regulatory pricing (where prices are controlled by the government).

In addition, the respondents were asked if the increase in Internet usage among both consumers and businesses over the last several years has affected their firms' pricing decisions and if their firms have developed any new pricing strategies as a result of this increase. On the whole, the pricing decisions of 16.2 percent of the firms have been affected by the increase in Internet usage. Most of these firms came from Singapore (29.6 percent of firms) compared to 16.7 percent of firms in the USA and 5.6 percent of firms in India. Overall, about 9 percent of firms have developed new pricing strategies due to the increase in Internet usage. Most of these firms came from the USA and Singapore, where about 13 percent of firms reported having developed new pricing strategies, compared to about 3 percent in India.

Pricing objectives To better understand the role of pricing objectives in the firm's choice of pricing strategy, the respondents were presented with a list of 17 possible objectives and asked to rate the importance of achieving each objective with regard to the most

Table 1.5 Mean ratings of importance of pricing objectives (1 = not at all important, 5 = extremely important)

Pricing objectives	US mean importance	Singapore mean importance	India mean importance	Full sample mean importance
1. Increase or maintain market share	4.21	4.02	4.15	4.14
2. Increase or maintain sales volume	4.16	4.17	4.14	4.16
3. Project a desired product image	3.57	3.96	3.21	3.55
4. Match competitor pricing	2.85	3.19	3.07	3.02
5. Increase or maintain money gross profit	3.72	4.02	3.86	3.85
6. Maintain level of competition	3.42	3.54	3.18	3.36
7. Avoid price wars	2.50	3.09	2.65	2.72
8. Increase or maintain sales revenue	4.12	4.00	3.72	3.94
9. Maintain distributor support	2.69	2.94	2.60	2.72
10. Increase or maintain gross profit margin	3.88	4.15	3.88	3.95
11. Achieve rational price structure	3.06	3.33	2.93	3.09
12. Erect or maintain barriers to entry	2.28	2.54	2.28	2.35
13. Increase or maintain liquidity	2.21	2.48	2.46	2.37
14. Undercut competitor pricing	1.97	1.98	1.94	1.96
15. Avoid government attention or intervention	1.47	1.94	1.74	1.70
16. Avoid customer complaints about unfair prices	2.11	2.61	2.43	2.36
17. Cover costs	3.57	3.69	3.44	3.56

important pricing strategy they have selected on a five-point scale where 1 represents 'not at all important' and 5 represents 'extremely important'. For the sample as a whole, the most important objectives were those of increasing or maintaining market share (mean importance rating of 4.14) and increasing or maintaining sales volume (mean importance rating of 4.16). These were followed by the objectives of increasing or maintaining gross profit margin (mean importance rating of 3.95) and that of increasing or maintaining sales revenue (mean importance rating of 3.94). The least important objectives were those of avoiding government attention or intervention and undercutting competitor pricing (mean importance rating of 1.70 and 1.96 respectively). The complete list of objectives and the importance ratings of each pricing objective for each country and for the sample as a whole are given in Table 1.5.

Pricing strategy determinants To examine the role of various pricing strategy determinants (expressed in the form of company and product conditions, market and customer conditions, and competitive conditions) in influencing choice of pricing strategy, the respondents were asked to rate the level or intensity of these conditions with regard to

the named product. Company and product determinants included the age of the product, issues relating to product design, production costs and capacity utilization, the firm's market share and coverage, the profitability of accompanying and supplementary sales, and the number of intermediaries in the supply chain. Market and customer determinants of pricing strategies included the sensitivity of the firm's customers to price differences between brands, sensitivity of market demand to changes in average price, ease of determining market demand, market growth rate, customer costs and legal constraints. Competitive determinants included the degree of product differentiation between brands, the ease of detecting competitive price changes, and market share concentration of the leading firms in the industry. Table 1.6 presents a summary of the respondents' mean ratings of these pricing strategy determinants, together with the appropriate rating scales.

Table 1.6 Mean ratings of pricing strategy determinants

Pricing strategy determinants	Rating scale	USA	S'pore	India	Full sample
Market conditions					
1. Sensitivity of customers to price differences between brands	1 = Insensitive, 7 = Sensitive	4.92	4.85	4.66	4.81
2. Sensitivity of market demand to changes in average price	1 = Insensitive, 7 = Sensitive	3.85	4.54	4.00	4.09
3. Ease of determining market demand	1 = Difficult, 7 = Easy	3.86	4.04	4.34	4.08
4. Market growth rate	1 = Low, 7 = High	3.92	4.00	4.54	4.16
5. Customer switching costs	1 = Low, 7 = High	3.21	3.94	3.65	3.56
6. Customer search costs	1 = Low, 7 = High	3.21	3.68	3.06	3.28
7. Customer transaction costs	1 = Low, 7 = High	2.96	3.47	3.21	3.18
8. Impact of the Internet on market demand	1 = Low, 7 = High	2.15	2.48	1.38	1.98
9. Legal constraints	1 = Low, 7 = High	2.48	2.28	2.06	2.27
Competitive conditions					
10. Ease of detecting competitive price changes	1 = Difficult, 7 = Easy	4.82	4.50	5.12	4.84
11. Market share concentration of the top three firms in the industry	1 = Less than 5%, 7 = Greater than 80%	5.04	5.09	5.40	5.19
12. Product differentiation between brands	1 = Low, 7 = High	4.08	4.09	3.62	3.92
13. Impact of the Internet on competitive conditions	1 = Low, 7 = High	2.37	2.68	1.42	2.13
Product/company conditions					
14. Estimated age of product in years		7.28	7.61	8.45	7.79
15. Cost disadvantage due to experience curve	Percentage of firms	34.2%	27.8%	43.1%	35.6%

Table 1.6 (continued)

Pricing strategy determinants	Rating scale	USA	S'pore	India	Full sample
16. Cost disadvantage due to economies of scale	Percentage of firms	35.9%	33.3%	47.2%	39.4%
17. Capacity utilization (relative to other products)	1 = Low, 7 = High	4.75	4.71	5.37	4.96
18. Costs (relative to competitors)	1 = Disadvantage 7 = Advantage	4.15	4.28	4.21	4.21
19. Major product change (significance of most current design change)	Percentage of firms	21.4%	20.4%	13.9%	18.2%
20. Market coverage	Percentage of firms serving only one customer segment	8.2%	9.3%	2.8%	6.5%
21. Market share	1 = Low, 7 = High	5.19	5.04	5.59	5.29
22. Per sale/contract pricing	1 = Low, 7 = High	0.53	0.57	0.38	0.49
23. Profitability of accompanying sales	1 = Low, 7 = High	4.34	4.15	3.26	3.89
24. Profitability of supplementary sales	1 = Low, 7 = High	3.15	3.53	2.64	3.06
25. Number of intermediaries in supply chain	1 = Low, 7 = High	2.92	2.69	2.81	2.81
26. Costs of developing the product	1 = Low, 7 = High	4.25	4.22	4.48	4.28
27. Impact of the Internet on product/company conditions	1 = Low, 7 = High	2.73	2.98	1.47	2.34

In terms of market and customer determinants of pricing strategy, the results suggest that customers are fairly sensitive to price differences between brands as well as to changes in the average price. The former is particularly true in the USA and Singapore, possibly due to the higher number of alternative brands available to customers in these highly developed markets, while the latter is especially so for Singapore, due to the small and concentrated nature of its market. All three markets appear to have a moderate growth rate. Customer costs (switching, search and transaction costs) are moderately low across all three markets. Finally, both the impact of the increase in Internet usage on market demand as well as legal constraints on pricing strategies appear to be rather low as well, suggesting, for the former, that most customers still employ traditional methods of shopping and purchase, and, for the latter, that government regulations on pricing are not too restrictive.

The ratings for the competitive determinants of pricing strategy suggest that it is fairly easy for the firms surveyed to detect competitive price changes in the market. Additionally, oligopolistic competition seems to prevail across all three countries, with the top three firms in various industries commanding (in total) more than half the market share in the industry. Product differentiation between brands appears to be moderate

and, as before, the impact of the Internet on the competitive conditions faced by the firms appears to be low.

Finally, in terms of the company and product determinants of pricing strategy, the ratings across firms in all three markets appear to be moderate and quite similar across countries, with a couple of exceptions. The first pertains to the frequency of a major product change – more than 20 percent of firms in the USA and Singapore report having made a significant change in their current product design while the figure is about 14 percent for India. The second pertains to market coverage: the products marketed by the Indian firms tend to serve multiple customer segments, with only 2.8 percent of Indian firms reporting that they serve only one segment, *vis-à-vis* 8.2 percent and 9.3 percent for firms in the USA and Singapore respectively.

Profile of firms and respondents The firms from which the survey responses were obtained cover a diverse range of industries and product categories. They also ranged from small-scale businesses with fewer than ten employees and annual revenues of less than $10 million to large, multinational corporations with several hundred thousand employees and billions of dollars in revenue. Most of the respondents surveyed were middle or senior managers who have had a significant number of years of managerial experience (average of 11.1 years) and have been employed in their present position for a considerable period of time (average of 4.5 years). In addition, most respondents have a fairly high degree of involvement in their firm's pricing decisions, with an average involvement rating of 5.45 on a seven-point scale where 1 represents 'not involved at all' and 7 represents 'strongly involved'. Detailed descriptive statistics on the profile of the firms and respondents are available from the authors.

4.2 Data analysis and discussion

We examined the relationship between the firms' choice of pricing strategies, pricing objectives and pricing strategy determinants by carrying out binary logistic regressions with the choice of the pricing strategy as the dependent variable and relevant variables representing the objectives, determinants, as well as firm and respondent characteristics as the explanatory variables. This section describes our data analysis procedure and its results.

Modeling approach and estimation Given that we collected a large number of variables in the study, we used factor analysis to see if the cumulative set of variables could be reduced to a smaller set of orthogonal factors, which would then be used to estimate the binary choice models for the different pricing strategies. The factor analysis was conducted separately on the groups of variables representing the pricing objectives, the pricing strategy, determinants, as well as the characteristics of the firm and the respondent.

The factor analysis for the 17 variables representing pricing objectives was relatively straightforward. The results shown in Table 1.7 indicate that the 17 objectives can be grouped into nine composite objectives, which explains 78.8 percent of the variance in the data.

The survey had outlined 27 possible determinants of pricing strategy that may influence a firm's choice of pricing strategies, broadly classified under three categories of business conditions: company and product conditions, market and customer conditions, and

Table 1.7 Factor analysis of the pricing objectives

Pricing objective	Factor loading	Name for the factor
1. Increase or maintain market share	0.79	Increase or maintain market share
2. Increase or maintain sales volume	0.85	
3. Increase or maintain sales revenue	0.73	
4. Increase or maintain gross profit dollars	0.83	Increase or maintain profit
5. Increase or maintain gross profit margin	0.86	
6. Cover costs	0.52	
7. Match competitor pricing	0.70	Competitor-based pricing
8. Undercut competitor pricing	0.84	
9. Achieve rational price structure	0.82	Rational pricing
10. Increase or maintain liquidity	0.58	
11. Maintain level of competition	0.50	Maintain competitive level
12. Avoid price wars	0.85	
13. Avoid government attention or intervention	0.62	Avoid government attention
14. Avoid customer complaints about unfair prices	0.88	
15. Erect or maintain barriers to entry	0.82	Erect or maintain barriers to entry
16. Maintain distributor support	0.87	Maintain distributor support
17. Project a desired product image	0.96	Project desired product image

competitive conditions. The results of the factor analysis on the 27 variables are shown in Table 1.8, and enabled us to simplify the set of 27 measured variables into 12 factors, which explains 77.4 percent of the variance in the original variables. All but two of the factor loadings are in the expected direction.

In addition to pricing objectives and determinants relating to the business conditions under which the firms are operating, specific demographic characteristics of the survey respondent and the firm may also play a part in affecting the choice of pricing strategy. To account for the effect of such respondent characteristics, we used the size of the firm and the degree of involvement of the respondent with the firm's pricing decisions as two other explanatory variables in the choice model. As with the pricing objectives and determinants, these two variables were based on a factor analysis of the demographic measures we collected in the survey.

The net result of the variable reduction exercise yielded 23 variables[3] (that affect choice of pricing strategy) for the choice model, and is summarized in Table 1.9. In addition, we included two dummy variables to take account of the country differences among the three countries; one dummy variable to represent US respondents and one to represent Singapore respondents.

[3] We use variables directly rather than factor scores to retain the specific meaning of the determinants of pricing strategies and ease of interpretation.

Table 1.8 Factor analysis of the measured pricing strategy determinants

Pricing determinants	Factor loading	Name for the factor
1. Impact of Internet on competitive conditions faced by firm	0.93	Impact of the Internet
2. Impact of Internet on market demand	0.90	
3. Impact of Internet on product/company conditions faced by your firm	0.80	
4. Customer switching costs	0.80	Customer costs
5. Customer search costs	0.76	
6. Customer transaction costs	0.76	
7. Cost disadvantage due to experience curve	0.92	Cost disadvantages
8. Cost disadvantage due to economies of scale	0.91	
9. Profitability of accompanying sales	0.84	Other sources of profit
10. Profitability of supplementary sales	0.74	
11. Sensitivity of customers to price differences between brands	0.79	Customer price sensitivity
12. Sensitivity of market demand to changes in average price	0.78	
13. Legal constraints	0.36	
14. Per sale/contract pricing	0.38	
15. Capacity utilization (relative to other products)	0.74	Capacity utilization
16. Age of product in years	0.64	
17. Costs relative to competitors	0.58	
18. Market share	0.69	Market share
19. Market share concentration of top three firms in the industry	0.68	
20. Ease of detecting competitive price changes	0.52	
21. Number of intermediaries in the supply chain	0.39	Intermediaries in the supply chain
22. Product differentiation between brands	−0.44	Product differentiation
23. Major product change	0.79	
24. Costs of developing the product	0.39	Market development costs
25. Market coverage	0.89	
26. Market growth rate	0.89	Market growth rate
27. Ease of determining market demand	0.60	Market demand determination

Our study examined a list of 19 possible pricing strategies, and we focused our analysis on six of the most important strategies as chosen by the respondents. We first selected the specific pricing strategy deemed by each respondent as the one with largest importance (out of possible five strategies that could be indicated by the respondent) for the product in question. We then identified the following six strategies that are most frequent with this criterion; the frequencies of these six strategies are: 53 for cost-plus pricing, 35 for

Table 1.9 Summary of the various factors affecting the choice of pricing strategy

Category	Factors
Pricing objectives	Increase or maintain market share
	Increase or maintain profit
	Competitor-based pricing
	Rational pricing
	Maintain competitive level
	Avoid government attention
	Erect or maintain barriers to entry
	Maintain distributor support
	Project desired product image
Pricing strategy determinants	*Company and product factors*
	Cost disadvantages
	Other sources of profit
	Capacity utilization
	Intermediaries in the supply chain
	Market and customer factors
	Impact of the Internet
	Customer costs
	Customer price sensitivity
	Market development costs
	Market growth
	Market demand determination
	Competitive factors
	Market share
	Product differentiation
Respondent characteristics	Firm size (number of employees)
	Degree of involvement in pricing

perceived value pricing, 34 for parity pricing, 16 for price signaling, and 14 each for premium pricing and leader pricing. We estimated the choice model in the form of binary logistic regressions for each of the six pricing strategies. Based on the factor analyses done above, there were 25 independent variables: 9 variables were for the objectives of pricing strategies, 12 for the determinants of strategy, 2 country variables and 1 variable each for the size of the firm and the degree of involvement of the respondent. The logistic regression model was run with all the 25 variables. Consequently, even variables that are not significant were a part of the model.

Results and discussion The estimated coefficients for the six pricing strategies are given in Table 1.10. This section discusses the estimation results and the observed relationship between the key elements of the pricing decision.

COST-PLUS PRICING Cost-plus pricing refers to the pricing of a product at a predetermined margin over the product's estimated production costs. Although it is historically a commonly used pricing method, critics have warned against the viability of cost-plus pricing as a profitable pricing strategy because not only does it ignore the customer's valuation of

Table 1.10 Estimated logistic regression coefficients for six pricing strategies

Variable name	Cost-plus pricing	Perceived value pricing	Parity pricing	Price signaling	Premium pricing	Leader pricing
Country – USA	0.211	**1.882***	**−25.397***	−0.199	**2.497**	0.165
Country – Singapore	0.398	**2.417***	**−2.178***	1.390	**3.072**	−23.794
Pricing objectives						
Increase or maintain market share	0.049	0.122	0.152	−0.011	**−0.506***	**−0.454**
Increase or maintain profit	**0.473***	−0.100	**−0.180***	0.017	0.083	**−0.541***
Competitor-based pricing	0.089	**−0.307***	**0.290***	**−0.410**	**−0.657***	−0.212
Rational pricing	**0.213***	−0.116	0.109	−0.194	**−0.615***	0.072
Maintain competitive level	−0.161	−0.075	**0.337***	**0.680***	0.443	−0.557
Avoid government attention	0.097	0.044	−0.135	−0.104	0.395	**1.008***
Erect or maintain barriers to entry	**−0.384***	**0.409***	**0.016***	0.092	−0.181	−0.232
Maintain distributor support	0.038	0.042	**0.027***	**−0.702***	**0.858**	−0.443
Project desired product image	**−0.356***	0.294	−0.194	0.484	**0.957***	**2.716***
Pricing strategy determinants						
Impact of the Internet	−0.030	−0.038	**0.308***	**0.112**	**−0.380***	−0.571
Customer costs	0.041	−0.060	**0.597***	−0.074	**−0.347***	**−0.473***
Cost disadvantages	**−0.274**	0.053	**1.193**	**−0.733***	−0.200	**1.606***
Other sources of profit	−0.028	−0.032	−0.166	0.001	0.211	0.158
Customer price sensitivity	0.016	−0.032	**1.181***	0.043	0.131	−0.190
Capacity utilization	−0.040	−0.033	−0.129	**0.248**	**−0.271**	0.100
Market share	0.034	−0.046	−0.028	0.199	−0.088	**1.476***
Intermediaries in the supply chain	**−0.231***	−0.035	−0.252	0.157	−0.058	**1.397***
Product differentiation	**0.244***	0.097	−0.483	**0.531***	−0.091	**−1.377***
Market development costs	−0.047	0.055	**0.262**	0.033	0.157	0.018
Market growth rate	0.011	−0.178	0.249	−0.204	**1.378***	0.801
Market demand determination	0.048	**0.228**	0.490	0.262	−0.379	0.137
Respondent and firm characteristics						
Firm size (number of employees)	**0.189***	0.074	**0.000**	−0.192	**0.634***	**−0.924***
Degree of involvement in pricing	**−0.212***	**0.107**	−0.009	0.045	**0.280**	0.053
Constant	**−4.828***	**−4.433***	**−3.696***	**−9.881***	**−9.200***	**−16.727***

Table 1.10 (continued)

Variable name	Cost-plus pricing	Perceived value pricing	Parity pricing	Price signaling	Premium pricing	Leader pricing
Number of observations	199	199	199	199	199	199
2lnL (negative)	168.222	139.532	123.172	68.128	48.268	37.936
Cox & Snell R-square	0.269	0.205	0.256	0.195	0.234	0.273
Hosmer–Lemeshow Chi Square (8 df)	8.867	NA	15.491	26.191	4.619	3.788
Percent correct predictions	79.9	82.9	82.8	93.5	95.5	93.0
Number selecting this strategy	53	35	34	16	14	14

Notes: Values in bold are significant at 0.20 or below.
Values in bold with an asterisk (*) are significant at 0.10 or below.

the product, it may in fact harm profitability by overpricing the product in weak markets and underpricing it when demand is strong. In fact, some researchers argue that using a product's cost to determine its price does not make sense because it is impossible to determine a product's unit cost accurately without first knowing its sales volume (which depends on price), and thus cost-plus pricers are 'forced to make the absurd assumption that they can set price without affecting volume' (Nagle and Hogan, 2006, p. 3). Nevertheless, the results of the present study suggest that it is in fact the most popular pricing strategy used by firms across different industries and countries.

In adopting cost-plus pricing, the estimation results show that the most significant pricing objectives are to increase or maintain profit and to maintain a rational pricing structure. Indeed, one of the key reasons behind the popularity of cost-plus pricing is that it brings with it an air of financial prudence. It is a conservative approach that balances risks and returns by seeking to achieve an acceptable level of financial viability rather than maximum profitability. However, cost-plus pricing tends to go against a firm's objective of erecting or maintaining barriers to entry and maintaining a desired product image. It is difficult for an incumbent to price low enough to deter new entrants if it needs to achieve a predetermined margin over its estimated production costs, and since it is a pricing strategy that accounts for only the firm's supply constraints and fails to consider the customer's perception of the product, it will be difficult to use it to influence the product's image in the customer mindset.

In terms of the pricing strategy determinants, the firm's cost disadvantages have a significant and negative impact on the choice of a cost-plus pricing strategy. This result appears counter-intuitive at first, since the higher a firm's estimated costs of production, the more necessary it will be to cover these costs adequately and, hence, the more one would expect the firm to adopt the cost-plus method. However, as shown in Table 1.4b, most firms use multiple pricing strategies even for the same product. It is likely that the firms are trying to find an optimal balance between cost-plus pricing and other methods that take into account other issues besides costs, particularly when cost-plus pricing

on its own leads to unreasonably high and uncompetitive prices. Next, the greater the number of intermediaries in the firm's supply chain, the less likely the firm is to adopt cost-plus pricing. This is because more intermediaries not only leads to more cost disadvantages, but also results in reduced pricing control for the firm with regard to the final price charged to consumers, making it more difficult for the firm to specify a target profit margin for its product. On the other hand, a high level of product differentiation increases the likelihood of a firm adopting cost-plus pricing. This is because competitive pricing pressures are reduced for a unique product, enabling the firm to set a price that is commensurate with the product's costs.

Finally, in terms of respondent and firm characteristics, larger firms are more likely to adopt cost-plus pricing, while the lower the survey respondent's degree of involvement with the pricing decision, the more likely the firm is to adopt this strategy. This may be because larger firms are more likely to have established pricing policies and cost-plus calculation methods in place, developed by their accounting and finance departments, which specify minimum pricing requirements above estimated production costs in order to achieve a certain projected return. In view of these policies, marketing managers are likely to have less flexibility over pricing decisions. As for the country-specific effects, the coefficients on the country dummies suggest no significant difference in a firm's likelihood of adopting cost-plus pricing across the three countries considered, which makes sense given its popularity as a pricing method.

PERCEIVED VALUE PRICING Perceived value pricing, the next most frequently used pricing strategy, refers to the practice of pricing the product in accordance with what customers perceive the product to be worth. It is a customer-centric approach to pricing that prioritizes the customer's product valuation above cost, competition and other considerations.

Looking at the coefficients for pricing objectives, we observe that competitor-based pricing has a negative relationship with the likelihood of adopting perceived value pricing. This is because the more a firm looks toward the customer in its pricing decisions, the less concerned it is about competitive pricing pressures. Next, the more a firm wants to stop new players from entering the market, the more likely it is to adopt perceived value pricing. Customers who believe that they are getting value for money are more likely to remain loyal to incumbent firms and will hence make the market less attractive for new entrants. Finally, it is interesting to note that maintaining a desired product image does not significantly affect the likelihood of adopting perceived value pricing. An explanation for this could be that product image does not necessarily have to do with a product's value or quality. For instance, in the automobile market, Volvo consistently projects an image of safety, while in the digital music player market, the Apple iPod projects a hip, cool and user-friendly image. In both cases, however, the desired image was established less through the respective firms' pricing strategies and more through consistent and effective advertising messages, word of mouth, and other non-price methods. In other words, a good product image does not necessarily imply an expensive or exclusive product.

In terms of the pricing strategy determinants, the easier it is to determine the market demand, the more likely it is for a firm to use perceived value pricing. No other determinants are observed to significantly affect the likelihood of adopting perceived value pricing. When firms know where their customers come from and are more confident

about their projected sales figures, they can more easily set a price that is more acceptable to customers and at the same time minimizes risks to profitability. Accordingly, in terms of respondent characteristics, the higher the degree of involvement of the respondent with the pricing decision, the more likely it is for the firm to practice perceived value pricing, since this method requires a more flexible approach to pricing. Finally, the results show the presence of significant country-specific effects for perceived value pricing. Firms operating in the USA appear most likely to adopt this method, followed by Singapore and then India.

PARITY PRICING Parity pricing refers to the practice of setting a price for the product that is comparable to that of the market leader or price leader. In the former case, it means pricing the product close to the prices set by the biggest player(s) in the industry (which may or may not be the lowest or highest price on the market). In the latter case, it means pricing the product close to the prices set by the lowest-price players on the market. It is a strategy that takes into account competitive pricing pressures more than other factors.

Looking at the coefficients on the pricing objective variables, we see that all three objectives that involve meeting competitive pricing pressures (competitor-based pricing, maintaining competitive level, and erecting or maintaining barriers to entry) have a positive relationship with a firm's likelihood of employing parity pricing, which is in line with expectations. Next, the desire to maintain distributor support also increases a firm's likelihood of using parity pricing. This is because in competitive markets, distributors are just as likely as customers to switch to a different supplier if the latter presents them with an opportunity to earn higher margins. Hence it is important for a firm to ensure that its distributors earn competitive margins, and one way of doing this (and demonstrating it to distributors) is by making sure that the (end-user) price of its product is comparable with those of other competing suppliers. Finally, the more a firm wants to increase or maintain its profit, the less likely it is to adopt parity pricing. This is also intuitively reasonable because, in this case, the firm is more concerned with setting prices that are comparable with the competition instead of maintaining or maximizing the product's profitability.

A number of pricing strategy determinants have a positive relationship with a firm's likelihood of using parity pricing. First, the higher the impact of the Internet on the firm's operating and business conditions, the more likely it is to adopt parity pricing. The exponential growth in global Internet usage over the last decade has greatly facilitated the flow of market information and reduced search and transaction costs for customers and distributors, making it easier for the latter to compare prices across potential suppliers. As a result, it has become more necessary for firms to price their products more competitively. Next, the higher the customer costs (in the form of search, transaction and switching costs) and the higher the customer price sensitivity, the more likely it is for a firm to practice parity pricing. The latter is self-explanatory, while the former can be explained by the notion that the more difficult it is for customers to compare or switch between suppliers, the more likely it is for firms to ignore pricing pressures from customers and focus on competitive pressures instead. In addition, high cost disadvantages and market development costs also lead to the increased likelihood of using parity pricing. This could be because firms are trying aggressively to recoup these costs and to make sure that they price in a manner that achieves a balance between per unit profitability (by pricing close

to the market leader) and market share (by pricing close to the price leader), which can be more profitable in the long run than pricing at either extreme.

The estimation results also show that, in general, firms in India are most likely to adopt parity pricing, followed by firms in Singapore and then the USA. However, specific respondent and firm characteristics do not appear to have a significant impact on the likelihood of this strategy being adopted.

PRICE SIGNALING Price signaling is the strategy of using price as an indicator to customers of the product's quality. Although other product attributes (such as brand name) may also influence customers' perceptions of a product's quality, price appears to be particularly influential, and most customers assume that price and quality are positively correlated. Accordingly, price signaling is one of the most popular pricing strategies that firms employ, as not only does it improve customers' quality perceptions of its product, the higher price also translates into larger margins. Like perceived value pricing, it is a customer-centric pricing strategy that focuses more on customers' product perceptions than on other factors.

The only significant pricing objective that increases a firm's likelihood of adopting price signaling appears to be maintaining the level of competition. Since the goal of price signaling is to communicate the quality of your product *vis-à-vis* the competition, it often involves setting a price that is comparable with (if not higher than) than the prices of competing products, thereby maintaining (or reducing) the level of competition and reducing the likelihood of a price war. In the same vein, having competitor-based pricing as a pricing objective significantly reduces the likelihood of price signaling being adopted, as does maintaining distributor support. The reason for the latter can again be attributed to the firm's focus on customers in adopting a price signaling strategy, even at the prospect of having distributors complain that a high retail price affects retail and intermediary sales. As in perceived value pricing, we note that projecting a desired image does not significantly influence the likelihood of price signaling being adopted as a strategy, and a similar reason as discussed previously may also be in effect here.

Looking at the coefficients on the pricing strategy determinants, the following variables increase the likelihood of price signaling being adopted by a firm: impact of the Internet, capacity utilization and product differentiation. As discussed under the section on parity pricing, the Internet has greatly facilitated the availability and flow of information to both firms and their customers. Many customers use the Internet to search for product information prior to purchase, and it serves as an efficient and cost-effective medium for firms to practice price signaling.[4] As for product differentiation, it is reasonable to postulate that firms that use price as an indicator of their product's quality typically have products that are quite differentiated from their competitors (or at least perceived to be so by the firm's customers), thereby justifying the higher relative price. Next, the capacity

[4] Many customers also use the Internet to seek low prices, and this may seem to run contrary to firms' use of price signaling via the Internet to indicate the quality of their product. One explanation could be that firms that use price signaling on the Internet are those whose products are differentiated enough in terms of perceived quality to warrant a price signaling strategy, or those who have a product line, with some lower-quality products priced competitively and others (targeted at the less price-conscious customers) priced relatively higher.

utilization variable encompasses not only how much the product in question makes use of the firm's available production capacity relative to its other products, but also the age of the product and the costs of the product relative to the firm's competitors. The positive coefficient on the variable can thus be explained by the notion that the more the firm has invested in a product, in terms of both time and production costs, the more likely the product is in fact of considerably higher quality than alternative products and, hence, the more likely the firm is to use price signaling to communicate this quality to customers. In further support of this observation, the coefficient on the cost disadvantages variable is negative, indicating that the fewer cost disadvantages the firm has, the more likely it is to produce a better product, which in turn makes it more likely to adopt price signaling.

Finally, the estimation results suggest that firms in all the three countries where the survey was performed are equally likely to use price signaling. Similarly, specific firm and respondent characteristics do not appear to significantly influence the probability that a firm will adopt this strategy.

PREMIUM PRICING Premium pricing is the strategy of pricing one version of a firm's product at a premium, offering more features than are available on the firm's other products. It is a strategy employed by firms that have multiple versions of the same product along a product line, with each version targeted at different customer segments.

We note first that both country-specific effects and respondent and firm characteristics are significant in influencing the likelihood of adopting this strategy. Firms in Singapore are more likely to adopt premium pricing, followed by the USA and India. Larger firms also have a higher likelihood of using this strategy, which makes intuitive sense because larger firms are more likely to have different versions of their product(s) for sale. Likewise, the respondent's degree of involvement in the pricing decision also has a significant and positive impact on the firm's likelihood of using premium pricing.

The following pricing objectives have a negative impact on the likelihood of a firm employing premium pricing: increasing or maintaining market share, competitor-based pricing and rational pricing. Since premium pricing is targeted at customers who value feature-laden products and are generally quite willing to pay a premium for them, firms that use this strategy are less likely to focus on market share or competitive pricing issues, at least not for the product in question. Conversely, maintaining distributor support and projecting a desired product image increase a firm's likelihood of adopting premium pricing. By pricing different versions of its products accordingly, instead of having a 'one-size-fits-all' average price that may overprice some products and underprice others, overall sales should improve as customers are given the flexibility to choose and pay for the value received. In addition, distributors also have the flexibility of carrying some or all of the firm's products. Hence it is likely that improved distributor support can be achieved with this pricing strategy. As for maintaining a desired product image, premium pricing can certainly help to differentiate the premium product from not only other products in the firm's product line but competing firms' products, as well, thereby contributing toward the image desired for the product.

As for the pricing strategy determinants, the following variables are observed to have a negative influence on the likelihood of premium pricing being adopted: customer costs, the impact of the Internet and capacity utilization. Interestingly, the latter two are in contrast to price signaling, which is another strategy that involves the setting of high prices.

The explanation may be as follows. In terms of the impact of the Internet, the ease of obtaining product information provided by the Internet may induce the firm's customers (even the more feature-conscious and less price-conscious ones) to explore other product options, both within the firm's product line and from competing firms, and increase the likelihood that these customers will buy an alternative product. Hence it has a negative impact on the probability of adopting premium pricing. As for capacity utilization, the observed result can be explained by the notion that the less the firm has invested in the product in terms of time and production costs, the less likely it is for the product to be feature-laden and, hence, be priced using premium pricing. Finally, the estimation results show that market growth rate has a positive impact on the likelihood of adopting premium pricing. This is because the faster the market and the firm's customer base grow, the more diverse customer tastes are likely to be. Hence it becomes more likely for firms to introduce, to suit different customers different versions of the product, at least one of which is likely to be premium-priced.

LEADER PRICING The sixth most frequently used pricing strategy is leader pricing, which refers to the practice of initiating a price change or establishing a benchmark price for a product in a category, and expecting other firms to follow. It is a pricing strategy that market leaders typically adopt, which makes its apparent popularity as a pricing strategy and the observed negative relationship between firm size and the likelihood of adopting leader pricing quite counter-intuitive. One reason for this could be that the firms in our sample are relatively small (Tables 1.7 and 1.9 show that about half the firms have annual revenues of less than $100 million and employ fewer than 500 people), suggesting that many of these firms compete in regional, local or niche markets of limited size where few or no major players dominate (as is the case in larger or global markets) and most players are of comparable footing with one another. In such markets, any price change initiated by a player is likely to be noticed by the other players. As with cost-plus pricing and price signaling, country-specific effects are not significant for leader pricing, suggesting that firms in all three countries are equally likely to adopt this pricing method.

The pricing objectives of increasing or maintaining market share, and increasing or maintaining profit, are observed to have negative relationships with the likelihood of adopting leader pricing. This is because the more competitors follow the benchmark set by the price leader, the more intense the competition and the more fragmented the market. This suggests that firms employ this strategy not as a primary strategy to enhance share or profitability, but more as a secondary strategy to be used when its primary strategies are inappropriate, such as when competition is intense and market demand is at its peak, with little room for further expansion. On the other hand, the more a firm wants to avoid government attention in its pricing decision, the more likely it is to adopt leader pricing. Similarly, leader pricing is more likely to be used when the firm wants to project a certain product image.

Lastly, in terms of the pricing strategy determinants, the observed results show that the higher the firm's market share, the more likely it is to adopt leader pricing since competitors are more likely to follow. Next, the higher the costs are to customers of buying and switching from the product (and presumably competing products), and the higher the degree of product differentiation, the less likely it is that the firm will adopt leader pricing. This may be because, under such situations, firms are less worried about competitors and

can price their products more independently of them. However, as with parity pricing, the results suggest that high cost disadvantages lead to an increased probability of adopting leader pricing. This could be because, with high costs of production, firms are more likely to set prices at a level that can cover these costs adequately and hope that its competitors will follow suit. For the same reason, the more intermediaries there are in the supply chain (which translates to a cost disadvantage), the more likely it is that a firm will use leader pricing.

5. Conclusion and future research

The foregoing empirical study has provided a current overview of the kinds of pricing strategies that firms adopt and a discussion of the various factors affecting the adoption of these strategies, across three different countries. It has also made a first attempt at studying the relationship between the three key elements of the pricing decision under an integrated framework: the pricing strategies adopted by a firm, the pricing objectives that these strategies are meant to achieve, and the strategy determinants (in the form of internal and external business conditions) that can influence the firm's choice of pricing strategies. Firms adopt different pricing strategies to achieve a variety of objectives and, contrary to popular belief, pricing to cover costs (or cost-plus pricing) is not always the dominant objective. Many pricing strategies aimed at maximizing earnings, improving customers' product perceptions and addressing competitive pressures (sometimes at the expense of share or profit) are frequently adopted to achieve other objectives. In addition to managerial objectives, the business conditions that the firm is operating under can also greatly influence the type of pricing strategy adopted. These conditions encompass both the firm's internal constraints and competencies as well as the external pressures it faces from competitors, consumers and supply chain partners. While these pricing strategy determinants often go hand in hand with the firm's pricing objectives, at times they are observed to be at odds with one another. This is because firms typically have multiple pricing objectives at any one time, and often some of these objectives are in conflict with one another (e.g. using cost-plus pricing to maintain or increase profit while using parity pricing to meet competitive pricing pressures and deter new entrants). In such a situation, firms have to find the optimal tradeoff between the various objectives and pricing strategies adopted, while taking into account the relevant pricing strategy determinants, in a way that provides the maximum overall 'benefit' to the firm. This benefit may comprise one or more of the following performance indicators: profit, market share, customer support/loyalty and distributor support, among others.

While the study has provided some new insights into the firm's pricing decisions, much further work still needs to be done, particularly to address the limitations of the present study. First, as is the case for much of managerial survey-based research, the small size of the sample used in the study, especially in each country, is an issue. Because of this limitation, the survey data had to be pooled across countries when performing the logistic regression for each pricing strategy, leaving the two country dummies as the only variables to account for country-specific effects. If more responses had been obtained and separate regressions had been performed for each country, deeper insights would have been obtained into the difference in pricing decisions across the three countries.

Next, the logistic regression models estimated in the study also pooled many industries and product types together. While the advantage of such an approach is that it

provides a general picture of how a firm (any firm in any industry) makes its pricing decision, the disadvantage is that it overlooks many interesting and critical differences in pricing decision-making that may exist across different industries. Future research can consider estimating separate models for different industries or product types. Along the same lines, various subsets of the array of pricing strategies, objectives and determinants considered may be more applicable to specific industries and products, and this would perhaps explain why many of the estimated coefficients in the regression models are non-significant. To address this limitation, more research needs to be done that first explores the applicability of various pricing strategies, objectives and determinants to various industries and products, after which a similar analysis of the relationships between these elements of the pricing decision can be done for each subset of industries and products.

Finally, while the descriptive study has provided a big picture of the relationship between the key elements of a pricing decision, more complex mathematical models can be developed to study this relationship in greater depth and under more rigorous modeling assumptions. For instance, rather than performing a binary logistic regression for each individual pricing strategy, which implicitly and somewhat unrealistically assumes that the pricing strategy choices within a firm were made independently, multinomial or multivariate pricing strategy choice models can be developed for the firms that would model the firm's strategy choice process more realistically. Other studies could incorporate game-theoretic frameworks that model the firm's optimal choice of pricing strategies, given its strategic considerations of its competitors' choices. The firm's objective function to be used in these game-theoretic models can vary from the popular profit function that is often used in game theory papers to other functions representing the many other objectives that the firm can have. The topic of price rigidity (or stickiness) warrants comprehensive econometric analyses for the US context using data collected for computing consumer price indexes and for other purposes.

References

Avlonitis, George J. and Kostis A. Indounas (2005), 'Pricing objectives and pricing methods in the services sector', *Journal of Services Marketing*, **19** (1), 47–57.

Bewley, Truman (2007), 'Report on an ongoing field study of pricing as it relates to menu costs', a handout prepared for a talk at the Cowles Foundation Conference, 'The Macroeconomics of Lumpy Adjustment', 11–12 June 2007.

Blinder, Alan S., Elie R.D. Canetti, David E. Lebow and Jeremy B. Rudd (1998), *Asking About Prices: A New Approach to Understanding Price Stickiness*, New York: Russell Foundation.

Cornille, David and Maarten Dossche (2006), 'The patterns and determinants of price setting in the Belgian industry', Working Paper No. 618, European Central Bank Working Paper Series.

Diamantopoulos, Adamantios and Brian Mathews (1995), *Making Pricing Decisions: A Study of Managerial Practice*, London: Chapman and Hall.

Hall, R. and C. Hitch (1939), 'Price theory and business behavior', *Oxford Economic Papers*, **2** (1), 12–45.

Jobber, David and Graham Hooley (1987), 'Pricing behavior in UK manufacturing and service industries', *Managerial and Decision Economics*, **8**, 167–71.

Lanzillotti, R.F. (1958), 'Pricing objectives in large companies', *American Economic Review*, **48** (December), 921–40.

Lien (Rupprecht), Sarah M. (2007), 'When do firms adjust prices? Evidence from micro panel data', KOF Working Paper No. 160.

Nagle, Thomas T. and John E. Hogan (2006), *The Strategy and Tactics of Pricing: A Guide to Growing More Profitably*, Princeton, NJ: Pearson Education.

Noble, Peter M. and Thomas S. Gruca (1999), 'Industrial pricing: theory and managerial practice', *Marketing Science*, **18** (3), 435–54.

Oxenfeldt, Alfred R. (1973), 'A decision making structure for price decisions', *Journal of Marketing*, **37** (January), 48–53.
Samiee, Saeed (1987), 'Pricing in marketing strategies of U.S. and foreign-based companies', *Journal of Business Research*, **15** (1), 17–30.
Shipley, David D. (1981), 'Pricing objectives in British manufacturing industry', *Journal of Industrial Economics*, **29** (4), 429–43.
Tellis, Gerard J. (1986), 'Beyond the many faces of price: an integration of pricing strategies', *Journal of Marketing*, **50** (October), 146–60.