

THE EFFECT OF PRICE INCREASES ON CONTRACEPTIVE SALES IN BANGLADESH

ROBERT L. CISZEWSKI AND PHILIP D. HARVEY

Population Services International and DKT International, Washington, DC, USA

Summary. In April 1990, the prices of five brands of contraceptives in the Bangladesh social marketing project were increased, by an average of 60%. The impact on condom sales was immediate and severe, with sales for the following 12 months dropping by 46% from the average during the preceding 12 months. The effect on oral contraceptive sales was less dramatic: average sales in the year following the increases dropped slightly despite a previously established pattern of rapidly rising sales. There appears no reasonable combination of events other than the price increase itself to explain most of the difference.

Introduction

The question of the prices consumers should pay for products offered through family planning programmes is complex. The goal of most programmes is to maximise contraceptive use, especially among the poor, and affordability is obviously a major factor for this group.

At the same time, other factors must be considered. For example, because most family planning programmes are supported by public or donor funds it is felt that the beneficiary should pay as much as possible of the cost of bringing him the product, in order to minimise subsidies. Further, it is widely accepted that the cost to the consumer should be enough to provide reasonable assurance that he will use the product for the purpose for which it is intended.

Being convinced that continuing increases in sales of both condoms and pills were evidence that prices might be too low, and under pressure to narrow the required subsidy (i.e. the difference between total expenditures and total revenues from sales), USAID, the donor for the Bangladesh project, insisted on the April 1990 price increases. If prices were indeed lower than they needed to be, and the consumer could be persuaded to pay a few cents more per month, then the resulting increased revenues would represent, from the donor's viewpoint, a very positive step. The miscalculation was in believing that a few cents a month is an inconsiderable amount for already-strained Bangladeshi budgets. The most important element, if child spacing programmes are to succeed, is for the price to be within the grasp of the population the programme must reach. However willing a couple may be to adopt family planning, if

the necessary products are not available or are perceived to be beyond their financial means, the couple will continue to have too many pregnancies.

The pricing conflict seems to be especially intense in contraceptive social marketing programmes which are designed to use the expertise and infrastructure of the commercial marketplace to deliver affordable contraceptives to the target population. Because of the 'commercial' nature of such programmes, donors often feel that subsidies should be reduced by charging higher prices. Yet it is the poorest consumers who must be reached with social marketing, just like any other family planning programme. The attempt to balance these critical considerations, and especially to set prices that recover increasingly substantial portions of programme costs, can lead to erratic and sometimes destructive pricing policies.

Background

Little is known about the influence of contraceptive prices on sales in family planning programmes. Lewis (1985, 1986) addressed this issue but the paucity of data precluded any firm conclusions. Market research about acceptable or ideal prices for contraceptive products has been carried out (e.g. Davies & Louis, 1977; Schellstede & Ciszewski, 1984) but, again, without any ensuing price tests to confirm or deny the operating hypotheses. Tipping (1989) reached some tentative conclusions about what sales of selected contraceptives at various prices might be but these have not been confirmed by actual sales experience.

In a recently completed price test for Sathi condoms in Pakistan, the price of a pack of four condoms was increased from one to two rupees in two selected towns while, simultaneously, the price was increased by only half as much (to 1.5 rupees) in the rest of the country. Interviews were conducted before and after the price increase to ascertain the difference in the drop-out rate in the two zones. In the low increase area, 21% of the purchasers dropped out between the two interviews while in the high increase area, 56% dropped out. These results appear to be significant (Davies, 1992). Other studies of the relationship between contraceptive prices and demand (Liskin *et al.*, 1990; Lande & Geller, 1991) report 'mixed results' but also suggest that sudden large price increases probably affect demand substantially and negatively.

Further studies of contraceptive pricing and demand are clearly needed, particularly because of the apparently arbitrary way in which prices are set for contraceptives in social marketing programmes worldwide. Traditionally, for example, prices for a condom in Asian programmes have been set at the equivalent of about US 1 cent each, whereas a typical price in sub-Saharan Africa is four times that amount. These differences are not related to per capita gross national product or other income-related indices, but appear to have been arrived at almost capriciously when viewed in a global context. A review of contraceptive prices and their effect on sales thus appears to be particularly needed at this time.

The Bangladesh setting

Bangladesh provides an excellent setting for such an examination. First, the social marketing project (SMP) there is very large, serving 1.5 million couples, and has been

Table 1. Bangladesh Social Marketing Project: retail prices (Taka) for contraceptives, 1976–90

Product	1976	1980	1983	1985	1988	1990
Raja (per piece)	0.1333	0.15		0.20		0.33
Panther (per piece)			0.50			0.75
Majestic (per piece)				0.40		Discontinued 1989
Maya (per cycle)	0.70	1.00		1.50	2.00	3.00
Ovacon (per cycle)		4.00				6.00

operating for many years. Sales trends are well established and a great diversity of Bangladesh institutions are involved in the project. Over 120,000 retail outlets sell the Raja condom and over 40,000 outlets sell the two brands of pills considered in this paper. This reduces the chances that any one participating company or individual (e.g. a key salesman) might have had a significant impact on these results.

Because it is such a large programme, the donor investment is considerable. Costs of the commodities being sold by 1990 were slightly less than US \$7 million per year, and operating costs—more than half of which is spent on advertising and promotion as well as motivational campaigns designed to promote family planning in general—were more than US \$2.5 million. Any growth in revenues could help to offset this investment.

Pricing history

Prices for the contraceptives sold in the Bangladesh SMP were first set in 1974 at Tk 0.13 per condom (Raja) and Tk 0.70 for pills (Maya). (The 1991 exchange rate was approximately 38 Taka per US\$.) In 1983 and 1985, two other condom brands were introduced at retail prices of Tk 0.50 (Panther) and Tk 0.40 (Majestic). The Majestic condom was subsequently dropped and is therefore not part of this review. In 1980, a new pill, Ovacon, was introduced at a retail price of Tk 4.00. Table 1 gives the pricing history for each of these brands.

Price increases for these products before 1990 occurred sporadically, every 4 to 10 years, and were designed to keep pace with inflation. The results of these changes, which ranged from 12% to 33% for Raja and 33% to 50% for Maya, were minor: in each case sales faltered slightly but for a very short time only, then recovered and resumed the normal upward trend. This tended to confirm the belief that these price rises were appropriate and in line with inflationary trends.

However, given the economic condition of the country and the absence of improvement in the disposable income of the poor, there was some reluctance to raise prices again in 1990. Since the two major products (Raja and Maya) were first introduced, inflation had decreased the value of money by some 40% and the Taka had depreciated against the dollar by more than 60%, with the result that contraceptive commodity costs had increased significantly in terms of local currency, but the buying power of the consumer had grown very little.

Devaluation and inflation have their primary impact on the poor. Contraceptive price increases in 1990, designed only in part to compensate for inflation, did not take this reality into consideration. In fact, because of pressure to augment revenues to the programme, the increases were excessive even by the indices used earlier. The price of rice, for example, had risen from Tk 3.50 to Tk 12.00 (an increase of 350%) during the 8-year period before the latest round of increases, while the minimum daily wage had gone up by only 75%, from Tk 40 to Tk 70. (While this minimum daily wage, approximately equivalent to US \$2, is frequently not enforced, it still provides a useful guideline. In both rural and urban areas, for example, labour is often available for as little as Tk 25 (US \$0.70) per day. Despite this variability, the increase in the minimum wage appears to have followed the currency devaluation indices reasonably well. Concurrently, the increase in the cost of essential commodities was far greater.) Under such circumstances, it is not surprising that consumer purchases of contraceptives, especially condoms, were drastically influenced by a price increase of 60% (Table 1).

Effect of price increase

Condoms

The Raja condom has always been the main product of the Bangladesh SMP. Introduced in 1975, its sales grew from a total of just over 8 million condoms in 1976 to more than 110 million in 1989, making it the second largest selling social marketing brand in the world after India's Nirodh. The effect of the 65% price increase on subsequent sales of Raja constitutes the greatest cause for concern, for although the SMP has marketed other brands, the Raja brand has always dominated, averaging more than 60% of the couple years of protection (CYP) for the project (including pills and spermicides) over the past decade. (A couple year of protection is the delivery of contraceptive services adequate to provide complete protection against pregnancy for one couple for 1 year: one CYP = 100 condoms, or thirteen cycles of pills.)

The sales pattern for Raja for the year immediately preceding and the year following the price increase (Fig. 1) is revealing. In spite of 2 months in the preceding 12 which seem extraordinary (due to the end of the monsoon and a particularly good harvest in October, and to rumours of the impending price increases in March), the negative impact is immediate and lasting: Average monthly sales fell from 9.3 million to 5.1 million, a loss of more than 45%. A full year after the increases, sales remained far short of earlier levels. Further, the sales trend for Raja over the 10 years preceding the 1990 price increase showed an average annual increment of 9.9%, leading to the reasonable expectation that sales would have continued to increase by 5–10%, in the absence of the price increase (Fig. 2).

Urban versus rural. The effect of the price increase appears to have been consistent throughout Bangladesh with respect to both urban and rural outlets. For Raja, about 70% of retail outlets are in rural areas and, prior to the price increase, the sales coverage had reached its natural practical limits. The product was available in more than 120,000 shops—from cigarette, medicine and food shops in rural markets to large pharmacies and general merchandise stores in the cities—and project managers were

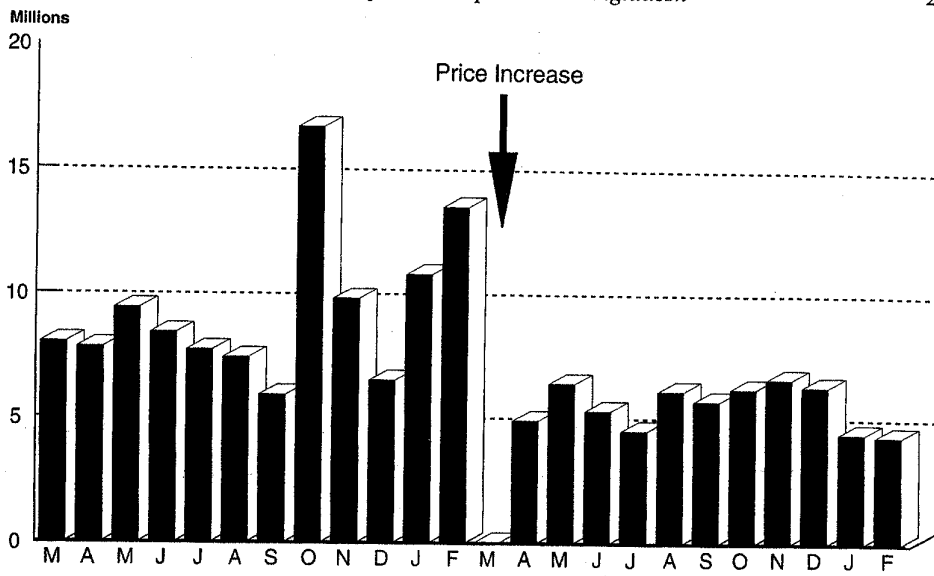


Fig. 1. Raja sales, 12 months before and 12 months after 1990 price increase.

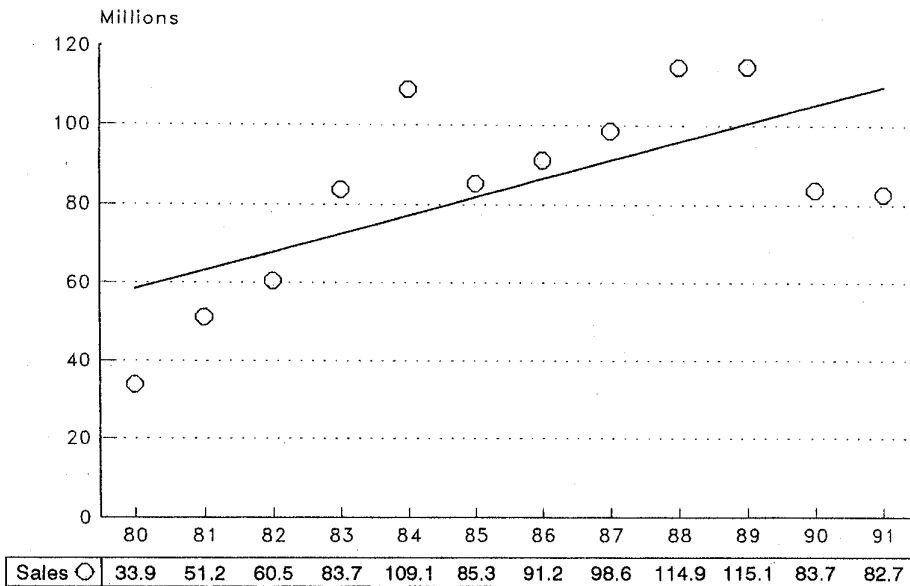


Fig. 2. Condom sales trend, 10 years preceding and 2 years following 1990 price increase.

satisfied with both the scope and variety of retail coverage. For this reason, there has been no concerted effort in recent years to increase the number of retail outlets. Rather, the total number of outlets had remained approximately constant, with some dropping out, some closing and others opening or stocking the product for the first time. With the loss of outlets in 1990, efforts are now being made to get back to earlier coverage levels.

Oral contraceptives are sold only in pharmacies, about half of which are in urban areas and half in rural.

Price rise universally implemented. The price increase, or at least most of it (and in a few cases an increase even greater than the one imposed by the project), was quickly and universally implemented throughout the distribution system, because it was imposed on the trade simultaneously with the advertised increase in the consumer price. Retailers who had been paying Tk 0.48 for a three-pack of Raja and re-selling it for Tk 0.60, were now required to pay Tk 0.75 per three-pack with a resale price of Tk 1.00. The result was a drop in consumer demand, and a consequent drop in retailer demand, leading marginal retailers either to change to Sultans (see below) which they could get at a lower price than Raja, or to stop selling condoms altogether.

Substitution of alternative condoms. Government field workers have traditionally provided Sultan brand condoms free of charge to target couples throughout Bangladesh. By chance, the government decided in mid-1990 that these condoms should no longer be free, and imposed a price to acceptors of Tk 0.50 per dozen. This resulted in a drop in reported Sultan distribution from 65.3 million in the March 1989–February 1990 period, to 42.4 million in the subsequent 12-month period. However, while total Sultan distribution went down, it is likely that sales through retail outlets in competition with Raja actually went up. The imposition of a charge for Sultan and the demand that distribution statistics be met by cash flow created a problem for government workers, and it seems likely that many of them began selling to shops, compelled by the fact that they could no longer just draw a 'reasonable' number of condoms from their warehouses and later report them as distributed, but now had to produce cash for each condom sold. Government condoms thus began appearing in shops and, to some extent, replaced Raja on the shelves. Evidence of this is borne out by research as well as field reports from SMP sales staff. Many retailers, particularly in the months immediately following the price increase, refused to re-stock Raja or reduced their normal purchases, citing abundant supplies of Sultan at much lower prices.

However, given the decrease in total condom distribution, with both Raja and the public sector Sultan going down, it is clear that Sultan did not make up for all of the Raja shortfall. Moreover, public policy towards and public sector enthusiasm for programmes involving retail trade has historically been transitory, and it is likely that government stocks carried by retailers in 1990–91 will not be regularly replaced, and once more—as was the case before the SMP began—condoms will not be readily available in rural areas, unless ways can be found to overcome the resistance to the Raja price increase.

Overall, it is estimated that no more than 15–20% of the Raja sales decrement was made up for by increased Sultan sales during the one year after the price increases. For subsequent years, it is likely that even less compensation will be provided through Sultan sales.

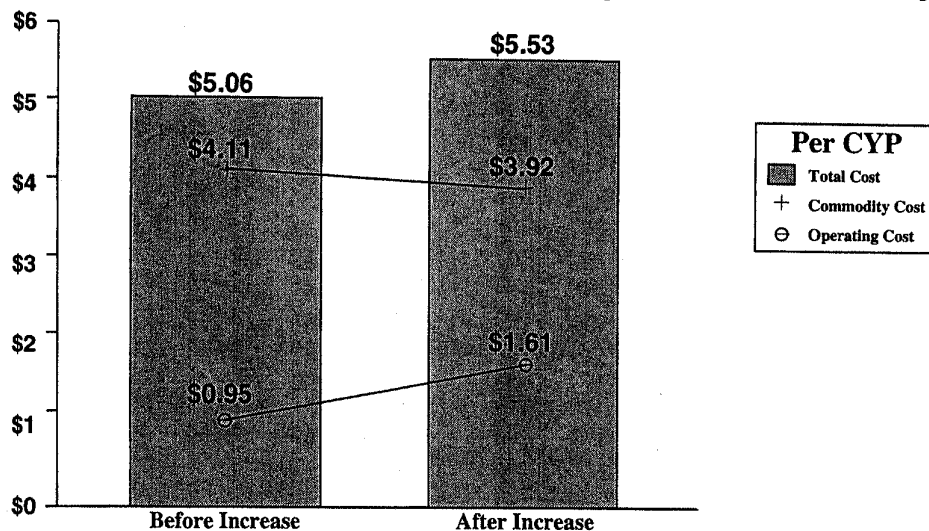


Fig. 3. Cost per CYP, 12 months before and after 1990 price increase.

Needy beneficiaries lost. The lost Raja sales represent (at 100 condoms per couple per year) a likely loss of between 400,000 and 500,000 beneficiaries in the year immediately following the price increase and the loss of several hundred thousands of couples from the project for several years after this event. These are likely to be the couples with lowest incomes, for whom the price increase was most significant, and those in deep rural areas barely served by the public sector. The lost beneficiaries are therefore important even beyond their numbers because they were the most difficult to bring into the programme and are the ones whose demographic and socioeconomic equivalents will be the most difficult and expensive to recruit anew. Any cost savings to the project represented by increased income have been wiped out by the radically reduced project impact, particularly among the most vulnerable beneficiaries. Despite substantially increased revenue per condom and per pill sold, the project cost per CYP actually increased following the price increase from \$5.06 to \$5.53. This is because operating expenses went up (primarily in an effort to compensate for the price increase by intensified marketing) as the volume of sales went down, and reverse economies of scale overwhelmed the increased (per contraceptive) revenue (Fig. 3).

All in all, the large price increase for Raja seems to have been ill-considered, and has proved cataclysmic for the social marketing of condoms in Bangladesh.

Panther. Panther condoms were introduced in 1983. Sales grew from just over 2 million to a maximum of 7.4 million in 1990. Because of a shortage of stock in 1989 and because Panther was competing with Majestic during the period 1985-89 (Majestic out-sold Panther during each of these years) it is more difficult to draw conclusions from the 1990 price increase for Panther. For example, because of the 1989 shortage only 192,000 condoms were sold during the first 9 months of 1989, but this was followed by an increase to an average of just over one million per month in the ensuing

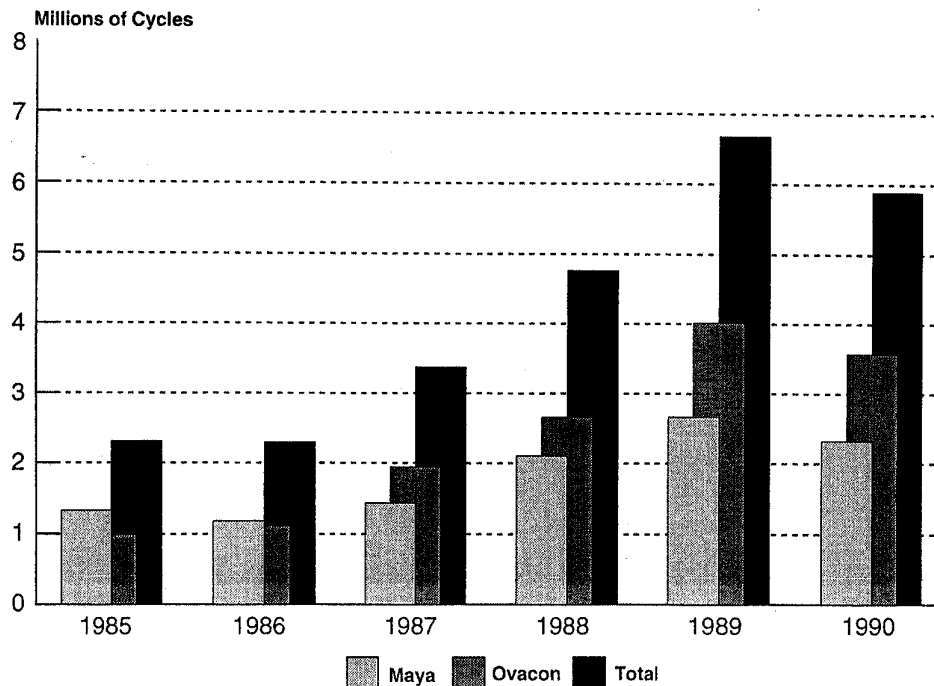


Fig. 4. Oral contraceptive sales, SMP, Bangladesh.

5 months. Comparing Panther sales in this 5-month period (October 1989–February 1990) with sales for the same 5 months one year later, shows a drop of 28%. This is not as drastic as the drop in Raja sales but is similar in both direction and magnitude.

Oral contraceptives

The impact of the price increase on pill sales was much less dramatic and, because both brands of pills were available throughout this period, sales patterns for both the higher and lower priced brands can be compared.

Sales of the two brands (Ovacon and Maya) had tripled during the period 1985–89. It is thus estimated that combined sales of the two brands during the year following the price increase would have risen to at least 8 million cycles (an increase of 14%). Instead the figure was 6.8 million cycles, a small decrease (Fig. 4).

Government pills. Distribution of public sector pills went up from 21.4 million cycles in the March 1989–February 1990 period to 25.9 million in the ensuing 12-month period, an increase of 21%. Unlike the case with condoms, however, there was no observed cross-over between public sector pills and the social marketing brands. Rather, the continuing substantial gains in government distribution reflect a growing demand for pills in Bangladesh—a trend borne out by recent data from contraceptive prevalence surveys. This supports the hypothesis that Ovacon and Maya pill sales

would have increased significantly between early 1990 and early 1991 had it not been for the increase in prices.

In recognising the different effects of the price increases on condom versus pill sales, two factors are of primary importance. First, the condom is very often the contraceptive choice of the poor. It requires a small individual outlay (poor people are accustomed to buying a single cigarette, 100 g of fish or meat, etc.) and is perceived as something which can be bought only when needed. Also, there is a much greater tendency for condoms to be purchased casually, on impulse, by people for whom the alternative to contraception (i.e. the possibility of a pregnancy) may not be perceived as a pressing or unduly negative prospect.

It is also possible that the condom price increase crossed over the threshold that customers were willing to pay for an impulse item. This was exacerbated by price increases for basic necessities which resulted in a sharp decrease in discretionary income among the poor, perhaps pushing condoms out of reach. For pill buyers, on the other hand, the higher prices may still be within the 'right price' band.

Further, pill users may have a greater tendency to maintain use of the product because it requires both consistent motivation and a regimen which users may not wish to interrupt. Discontinuation of pills often results in physiological changes such as less regular menstruation, which may not be desired. The fact that women have a greater influence over pill purchases than over condom buying probably contributed to this trend. An unusual characteristic of the Bangladesh project is that men are overwhelmingly the purchasers of pills as well as of condoms. The generally accepted estimate by consumer goods companies in Bangladesh is that men make 95% of all packaged goods purchases, even of products which are intended primarily for use by women. This does not, however, mean that women do not influence choices; they do, most notably among the middle and upper economic groups which tend to be concentrated in urban areas where over half of the project's oral contraceptives are sold. Pill use overall, therefore, probably has a stronger built-in inertia to change than condom use.

The differences in the changes in demand for condoms and pills are even more dramatic in view of the absolute value of the prices being charged. Raja, at Tk 0.33 each, costs the customer about US \$0.01 equivalent, one of the lowest-priced condoms in the world. (Prices in other Asian and African countries range from US \$0.01 to 0.1.) At 100 condoms per year, a CYP costs the customer Tk 33 (US \$0.92), a reasonable price by social marketing standards even in one of the world's poorest countries (Bangladesh per capita GNP was US \$180 in 1989).

Ovacon, on the other hand, now costs the customer Tk 78 (US \$2.20) per CYP, more than double the Raja cost, yet was less affected by the price increase. Even the lower priced Maya pill costs the consumer 20% more than Raja per CYP. This suggests both the stronger inertial tendencies and the probability that Bangladesh pill users (especially Ovacon users) are more affluent than condom users.

Was it cost effective to raise prices?

While the total SMP cost dropped from \$8.5 million (in the 12 months preceding the price rises) to \$6.9 million (in the succeeding 12 months), the cost per CYP went up because the number of CYP went down by 26%.

Table 2. Cost comparisons before and after price increases

	1989/90	1990/91	% change
Operating costs	\$2.7 million	\$3.3 million	+22
Commodity costs	\$6.9 million	\$4.9 million	-29
Less revenues	\$1.1 million	\$1.3 million	+18
Total donor cost	\$8.5 million	\$6.9 million	-19
CYPs delivered	1,680,000	1,248,000	-26
Cost per CYP	\$5.06	\$5.53	+9*

*Although donor cost went down by 19%, CYPs decreased by 26%, with a corresponding increase in cost per CYP.

The operating (non-commodity) costs of the project increased from \$2.7 million to \$3.3 million, primarily because of increased marketing expenditure. In anticipation of and reaction to the trade and consumer resistance to the price increases, additional advertising (films, radio scripts, print campaigns) was developed and the rate of broadcast or placement augmented. Also, extra quantities of promotional materials, including point-of-purchase and packaging innovations, were produced. These additions to the promotional budget were responsible for more than half of the 22% increase in operating costs (Table 2). Commodity costs, of course, went down.

Profit margins to the trade

It is often argued that better margins for shopkeepers will so increase their enthusiasm for a more expensive product that sales will not be lost, but in this case the reverse was true. Retailer profit margins for Raja increased in both percentage and absolute terms when the price rise came into effect. Before the price increase, the mark-up was 25% (buy at Tk 0.16, sell at Tk 0.20). After the increase shopkeepers could buy at Tk 0.25 and sell at Tk 0.33, a mark-up of more than 30% and a doubling of margin per condom, from Tk 0.4 to Tk 0.8. Despite this, shopkeepers generally claimed that demand had fallen so much as a result of the consumer price increase that the extra margin was of little value. The nominal mark-up is of little import if consumer demand is lacking.

Revenue gains versus CYP

Because of the price increase an additional \$209,000 of income was generated in the year under review, despite the drop in the number of contraceptives sold. But 432,000 CYP were lost. This illustrates the tension between policies aimed at greater self sufficiency and the objectives of programmes aiming to provide affordable family planning to the maximum number of low income couples. In short, the price rise was not at all cost-effective if results are measured either in the cost per client or, even more important, in total clients served.

Lessons learned

The most important lesson from this experience is surely that contraceptive price increases, especially for condoms, must be made gradually and cautiously. Such increases, whenever possible, should be designed primarily to keep pace with inflation, take into consideration the actual buying power of the intended beneficiary rather than relying on gross national figures, and be made in small, more frequent increments instead of in larger single increases.

Finally, the differential impact of the price increases on the two different pill brands emphasises the usefulness of market segmentation in programmes of this kind. If a project has both a higher priced and a lower priced contraceptive already on the market when the prices of both are raised, there is at least an opportunity for those using the higher priced product to move to the lower priced one rather than dropping out altogether. However, this does not help those who can no longer afford even the lower priced product, and these are the very couples it is most important to recruit and to keep in family planning programmes.

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