COMMERCIAL MARKET STRATEGIES
NEW DIRECTIONS IN REPRODUCTIVE HEALTH

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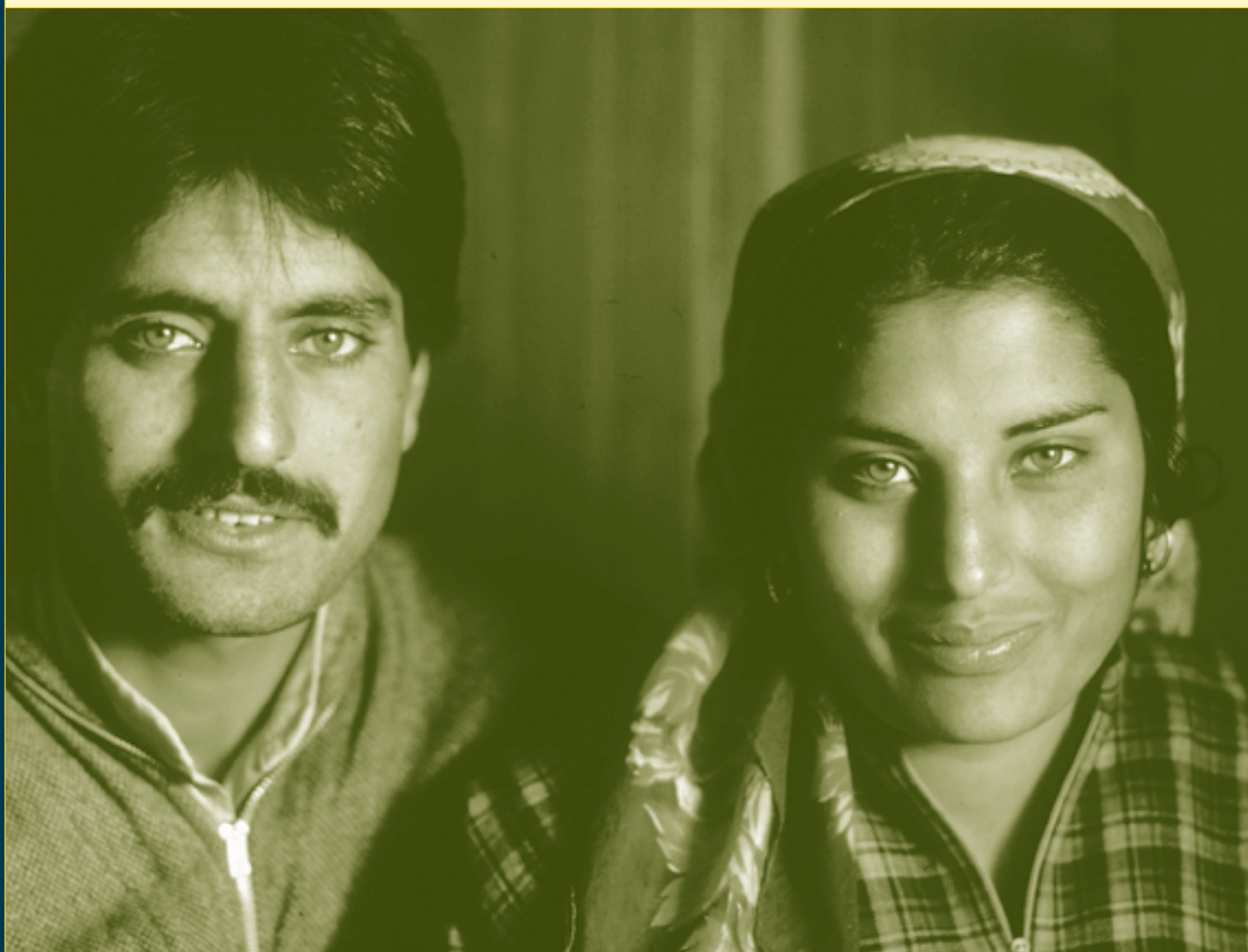
WHAT INFLUENCES THE PRIVATE PROVISION OF CONTRACEPTIVES?

Rodolfo Bulatao, PhD

FEBRUARY 2002



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Commercial Market Strategies (CMS) is a USAID-funded project that aims to increase access to and demand for quality reproductive health and family planning in developing countries.

The CMS project is implemented by a consortium of leading-edge organizations in the areas of reproductive health and family planning, social marketing, and research: Deloitte Touche Tohmatsu (prime contractor), Abt Associates, Population Sevices International, and Meridian Group International, Inc.

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This paper is condensed from a commissioned literature review and analysis, entitled "The Private Share in Contraceptive Provision," conducted by Rodolfo A Bulatao for The Futures Group International, August 2001.

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Acronyms

AIDS	acquired immunodeficiency syndrome
CMS	Commercial Market Strategies project (USAID-funded; 1998–2003)
DfID	Department for International Development (United Kingdom)
DHS	Demographic and Health Surveys (USAID-funded)
GDP	gross domestic product
HIV	human immunodeficiency virus
ICRG	*International Country Risk Guide* (World Bank)
MWRA	married women of reproductive age (15–49)
NGO	non-government organization
OC	oral contraceptives
PHR*plus*	Partnerships for Health Reform Plus project (USAID-funded; 2001–2005)
POLICY	The Policy Project, I and II (USAID-funded;1995–2000 and 2000–2005)
PVO	private voluntary organization
SLI	standard-of-living index
SM	social marketing
SOMARC	Social Marketing for Change project (USAID-funded; 1984–1998)
STI	sexually transmitted infection
USAID	United States Agency for International Development

Executive Summary

Policymakers are increasingly concerned about the ability of donors and government to keep pace with rising demand for contraception in developing countries. While the commercial private sector could potentially contribute more, its current share varies widely. Knowing whether and under what circumstances the private sector could help close the anticipated "contraceptive security gap" is an important policy question. This paper reviews available evidence to identify factors that may promote or hinder greater commercial sector participation.

The economic and business literatures suggest five broad factors that may affect the commercial provision of contraceptives:

- The potential market must be sufficient to attract commercial providers.
- Distribution and promotion channels must be available at reasonable cost.
- Commercial providers must have a competitive advantage relative to other providers.
- Regulations and the business climate must not constitute barriers or pose excessive risk.
- The provider must formulate and follow an appropriate business strategy.

This paper considers oral contraceptives, condoms, and injectables and looks at pharmacy and other commercial sales outlets as well as supply by private doctors and clinics (but not nongovernmental organizations). Case studies were conducted for Egypt, Peru, Pakistan, Indonesia, and the Philippines — countries representing high and low private shares for these methods. In addition, multiple regression analyses were conducted of all developing countries with available data (a total of 62 countries).

Findings

The size of the potential market can make a difference in the level of private sector activity. Private sources may be able to find a more satisfactory niche when the market is small (and government is not deeply involved) or large (and government cannot cope with all the demand), but may be squeezed out when the market is of medium size.

To get contraceptives into the hands of consumers, a private distribution network is necessary. Higher commercial sector share appears to be related to higher numbers and densities of retail outlets. A better network of roads — to deliver product or facilitate consumer access to outlets — may also increase private share, particularly for pills.

The price of public contraceptives is arguably the most important component of competition. Smaller differences between public and private sector prices are associated with greater private sector share. Price may be less relevant where public services are of poor quality.

What distributors do may be affected by government regulation. But many regulations are seldom enforced — such as those limiting ethical products to licensed pharmacies or restricting their advertising. In a few instances, regulation actually may be beneficial for private providers.

The potential market is not necessarily limited by low incomes: Commercial prices are already affordable for many households. Out-of pocket spending on other health care suggests that where sufficient motivation exists, consumers can access the commercial sector for supply methods. Free or reduced-price

public services may still have a role in providing for the poorest segment of society, in conjunction with attempts to segment the market.

Although specific information on manufacturers' and distributors' business strategies is largely unavailable, it appears that contraceptives are generally treated as a minor commodity. In some countries, distributors may make cheaper brands more available to attract a mass market, but in others, distributors may avoid any effort in this direction. Distributors may also attempt to restrict outlets from carrying competing brands.

Effective social marketing appears to raise the commercial outlet share. It does this not by adding subsidized sales, but rather through promotional and related activities. Greater program effort in social marketing and longer exposure to it are related to higher commercial outlet share.

Policy Implications

Can commercial sources provide more contraceptive coverage? Some of the factors related to the private share are not amenable to policy change. This is certainly the case for potential market size. Other factors fall clearly within the scope of government, such as lessening restrictions on licensing pharmacies and the products they may carry. Business strategies are under the control of individual companies, but may be influenced by government. Still other factors are within the control of national family planning programs, particularly as regards the pricing of public products and services and media promotion of specific contraceptives.

Although the variation in private share evident across countries may not have resulted from deliberate actions by policymakers, this review suggests that policy decisions can play an important role in increasing the private commercial share in the future. How governments regulate and how programs price and promote their products have consequences for the commercial sector that they should take into account.

Introduction

Policymakers are increasingly concerned about the ability of donors and government to keep pace with demand for contraception in developing countries. While the commercial sector could potentially contribute more — particularly for methods such as oral contraceptives and condoms — the actual commercial share varies widely, from under 25 percent of pill users in Honduras and the Philippines to over 90 percent in Brazil and Egypt. Understanding what circumstances the private sector share could be raised to help close the anticipated "contraceptive security gap" is an important policy question. This paper reviews available evidence to identify factors that may promote or hinder greater commercial sector participation in supplying contraceptives.

A Framework

In this paper, the "private commercial share" is defined as *the proportion of users of a given method who obtain their supplies from pharmacies, other commercial outlets, or private doctors or clinics,* excluding non-governmental organizations. This definition does not imply complete private financing — that users of commercial outlets use only commercial brands. Commercial outlets and private doctors may also distribute products that have been subsidized by government or donors. Such subsidized products could include both social-marketing brands and "leaked" commodities intended for distribution through public outlets. Data are generally not available to distinguish users of subsidized product obtained from commercial outlets from users who obtain commercial products. However, this paper does incorporate social-marketing efforts in determining total commercial outlet share.

Commercial provision of contraceptives is, in part, determined by general levels of commercial activity in the country. Governments and donors cannot mandate commercial providers to increase their activity, but they can impose conditions that make it harder to for them to do so. The economic and business literatures (see Desai, 1997; Douglas *et al*, 1982) suggest five broad factors that may affect the commercial provision of contraceptives:

- The actual and potential market for contraceptives (i.e., demand) must be sufficient to attract commercial providers.
- Distribution and promotion channels (i.e., supply) must be available at reasonable cost.
- The commercial provider must have a competitive advantage in comparison to other actual or potential providers.
- Specific regulations and the business climate must not constitute barriers or pose excessive risk to commercial providers.
- The provider must formulate and follow an appropriate business strategy.

Market Size & Potential

The current demand for contraceptives can be defined as the number of contraceptive users; potential demand could include individuals not currently using contraception who wish to postpone or terminate childbearing. Total market size is determined by both contraceptive prevalence and population size. All else being equal, larger countries provide potentially larger markets.

Markets of equal size may not be equally attractive to commercial providers. Markets that are geographically concentrated, especially in urban areas, may be easier to reach and more lucrative for commercial outlets. Consumer characteristics such as income levels and education may influence perceived opportunities for commercial suppliers. Finally, market potential must be viewed from several levels: from the national perspective taken by a manufacturer or importer to local retailers.

Distribution & Promotion Channels

From importer[1] to wholesaler to local retailer, supplying product requires a distribution network that may also involve prescribing physicians or other medical personnel. The efficiency of this network should affect the costs of commercial distribution. Easier and cheaper advertising outlets should also help. Contraceptives are a small item relative to other pharmaceuticals, accounting even in the best circumstances for perhaps only one or two percent of sales and profits. The costs of providing them, therefore, depend on tie-ins to other products that commercial providers carry or promote.

Competition

Contraceptive outlets face competition from other methods, from other brands, and from other providers — including the government. Other contraceptive methods may be equally or more popular, while the absence of preferred methods may increase use of less preferred methods. Direct competition may come from alternative formulations for the same basic methods: different contraceptive pills or different condom brands. Competition between commercial brands should not decrease total commercial outlet share and could even drive prices down and increase total sales.

Competition with other outlets, especially the public sector, may be especially relevant. Public outlets may provide the same contraceptive methods, even the same brands, at a minimal price or for free. At the same time, governments may cooperate with the private sector, as with social-marketing programs that provide some public finance to subsidize and/or promote product flowing through private channels. While publicly subsidized brands may compete with fully commercial brands, their promotion may enlarge the market and, at least in the long run, augment the potential for unsubsidized commercial sales.

Regulation & Business Climate

Other aspects of government policy and regulations or the general business climate may make private commercial sector contraceptive provision more costly. The business climate may be more or less favorable to private enterprise, regulations may restrict sales of pharmaceuticals or contraceptives in particular, prices may or may not be controlled, advertising may be forbidden, and a variety other similar factors may come into play (Kenney 1993).

Business Strategies

However favorable or unfavorable the circumstances, commercial sector expansion depends on providers' business strategies. In this paper, we will focus on two aspects of business strategy — the range of brands distributed by commercial partners, and the prices they charge for those brands.

Contraceptives provide a small proportion of pharmaceutical sales. They may therefore be provided as service items that fill some demand and provide a small amount of profit but are not heavily promoted. Providers must decide on product positioning, pricing, and promotion, and whether to sell high-price, upscale-market product or low-price, mass-market product. Niche marketing to wealthier consumers can

[1] Importation is necessary because only a dozen or so of the larger developing countries manufacture some contraceptives, and local manufacture is mainly the province of state-owned and operated entities (Rosen and Conly 1999:20). Private providers therefore rely on imports from relatively few transnational companies.

be profitable but does not generate high market share. Other idiosyncratic factors, such as relationships with government regulators or with government program officials and policymakers, may also help determine the size of the private commercial sector.

Few previous studies have examined how supply-side factors influence consumers. One line of research looks at the effect of price on contraceptive consumption. Consumers appear relatively insensitive to the price of medical services (Griffin 1988), and well-managed price increases have only a small impact on prevalence (Schwartz *et al* 1986). However, price can affect the choice of contraceptive methods and providers (Cizewski and Harvey 1995; Levin *et al* 1999). Pricing strategy is therefore a specific factor to consider in regard to competition or business strategy, to the extent data are available.

Two studies look directly at determinants of the private share of contraceptive provision. Winfrey *et al* (2000) attempted to predict the commercial outlet share for the total family planning market, including clinical methods. They found that greater urbanization contributed significantly to a higher commercial outlet market share. Higher income had a marginal effect, but it disappeared when urbanization was controlled. The level of modern contraceptive prevalence did not have a significant effect. Ratings of family planning program effort had an effect close to significance, with greater effort associated with a smaller commercial share. Winfrey *et al* also noted that public sector fees were associated with a higher commercial share for pills — particularly in low-income countries.

Another study (Bulatao 2000) analyzed the private commercial share by method for pills, injectables, and condoms. The effect of family planning program effort was curvilinear[2], with commercial outlet shares being highest where effort scores were in the middle of the range. Where Winfrey *et al* found no effect of contraceptive prevalence, this analysis did show an effect — the private share rose with prevalence, strongly for pills and less strongly for condoms, following a curvilinear path especially for condoms.

[2] A curvilinear relationship is one that follows a curved rather than a straight line. In this example, the relationship between family planning program effort looks like an upside-down 'U': private share is lowest when program effort is very low or very high, and highest when program effort scores are midway between low and high.

Methods & Data

This paper considers only supply methods: oral contraceptives, condoms, and injectables. Case studies are reported for countries representing high and low private shares for these methods. Multiple regression analyses are also reported for all developing countries with available data.

The commercial share is defined to include pharmacy and other commercial sales as well as supply by private doctors and clinics, but not by nongovernmental organizations.

The only standardized data source for market shares by contraceptive method is the Demographic and Health Survey (DHS). The most recent DHS available in early 2001 was selected for each country. Because the intent of the analyses was to explain commercial sector shares at the time of the DHS, data sources were taken from the same time period. In some cases that meant ignoring more recent developments, because there was no similarly recent DHS with which to compare them.

A wide array of standardized sources for explanatory data was consulted, drawn from the United Nations, the World Bank, and the World Health Organizations:

- Population figures were taken from the United Nations (1999);
- Ross *et al* (1999) were consulted for proportions married;
- the *World Development Indicators* (World Bank 1999, 2000a, 2000b) for incomes, literacy, radios, urbanization;
- World Health Organization (2000) for health expenditures; and
- Kaufman *et al* (1999; World Bank 2000c) and the *International Country Risk Guide* (ICRG), as cited in World Bank (1999), for indicators of governance.

Social-marketing sales were taken from tables compiled by DKT International. Standardized cross-country information about business strategies and distribution/promotion channels is not readily available and had to be gleaned from various country reports and assessments.

The analyses begin with five in-depth country case studies and comparisons across these cases. These are followed by cross-national regressions of 62 developing countries. Final conclusions are drawn from a synthesis of the case study and regression findings.

Case Studies

Five countries are considered: Egypt, Peru, Pakistan, Indonesia, and the Philippines. Regionally diverse, these countries represent a range of commercial outlet provision of contraceptives. Users' reports from the DHS show high private share in Egypt, Pakistan, and Indonesia, and substantially lower use of commercial outlets in Peru and the Philippines. Each country case begins with a description of the levels of private commercial provision of pills, condoms, and injectables and then proceeds through the factors in the framework.

Egypt

Commercial outlet share of pills, condoms & injectables

The 2000 DHS puts the commercial outlet share for pills at 88 percent: 82 percent of users rely on pharmacies, and six percent on private doctors, clinics, and hospitals. Previous surveys back to 1988 give similar totals ranging from 88 to 91 percent. There are no subsidized pill brands in the commercial market, although all prices are controlled by the government. For condoms, estimates of the commercial outlet shares for 1992 and 1988 were 96 and 99 percent respectively, declining to 80.5 percent in 2000.

Injectables are a fast-growing method in Egypt in both absolute and relative terms. This method is used by 6.1 percent of married women, up from 3.9 percent in 1998. Injectables were introduced into the national family planning program in 1995, and most of the growth in method use has come from the public sector — commercial outlets covered only 14 percent of the market in 2000.

Market size and potential for pills and condoms

The current market for pills in Egypt is relatively large. Although pill use fell from 1980 to 2000 from 16.6 to 9.5 percent of married women of reproductive age, the current figure still amounts to 1.1 million women, or 16.5 million pill cycles dispensed annually. Condom use for contraception has fluctuated between one and two percent since 1980; 1.0 percent of married women in 2000 rely on condoms, or just over 100,000 total users, not counting use for non-contraceptive purposes.

Egypt is moderately urbanized. Forty-four percent of the population lives in urban areas, and many users or potential users, particularly in Upper Egypt, are difficult to reach.

Per capita income in 1999 at purchasing power parity (i.e., controlling for what the currency can actually purchase) was estimated at $3,303, placing Egypt among the wealthier developing countries.[3] Per capita out-of-pocket health expenditures are $86 annually, and represent 73 percent of all health expenditures. Where education is concerned, the situation is not favorable. Illiteracy is as high as 61 percent of adult women 15 years and older — among the worst in developing countries.

[3] These and other socioeconomic data are from World Bank 1999, 2000a, 2000b.

Distribution and promotion channels

Egypt is reported to have 16,000 licensed pharmacies (one for every 4,000 people); half of all pharmaceutical sales take place in the two biggest cities of Cairo and Alexandria (Ravenholt and Said 1997:18–20).

The majority of pharmaceuticals come through one importer: the Egyptian Pharmaceutical Trading Company (EPTC). Government-subsidized and for many years the only company licensed for imports (Ravenholt 2000), EPTC distributes 7,000 products nationwide to 61 governorate-level warehouses, plus two warehouses for hospitals. It does not solicit orders — instead, pharmacies call in or pick up orders. In the 1990s, a few private pharmaceutical companies were also licensed to import, but their imports are probably only a quarter of the total. They have sales teams to push product, but their product lines and geographical coverage are limited compared to EPTC. Several multinational pharmaceutical firms maintain "scientific" offices in Egypt to promote their brands; they are not allowed to import or distribute, other than free samples.

Mass media channels are available

Egypt ranks very high among developing countries, with 324 radios per 1,000 people, 122 television sets per 1,000, and 40 newspapers per 1,000. However, high costs of broadcast media advertising present a major obstacle, even when regulations prohibiting advertising for pharmaceuticals are waived. Some broadcast contraceptive advertising did appear for government and NGO services, but not commercial services. Pharmacies depend instead on outdoor signs and print media, reaching limited audiences in specific areas. The potential of advertising is suggested by the fact that customers were still asking pharmacists for an NGO-advertised product, *Norminest*, three years after the product was discontinued (Ravenholt and Said 1997:28–30).

Competition

Contraceptive alternatives are limited. Female sterilization is unavailable except for specific medical conditions (Ravenholt and Said 1997:6). IUDs may partly replace sterilization, with other women using pills or injectables. Pharmacy retail audits in 2000 found nine combined and two progestin-only pill brands (Futures Group, 2000), at prices ranging from 0.65 to 15.30 Egyptian pounds (3.85 pounds = US$1 in January 2001). Two brands are available at the same prices at public outlets.

Prices of all registered pharmaceuticals are controlled by the government. The price of any given contraceptive brand is usually the same, whether it is offered in the public, NGO, or commercial sector. Consequently, contraceptive social marketing in Egypt does not affect prices. Social marketing was introduced in 1979 but declined in the 1990s. Expert-rated social-marketing effort fell from 4.0 (a perfect score) in 1989 to 1.3 in 1999. At their height in the early 1990s, social-marketing programs sold enough pills annually to provide contraceptive protection for 1.8 percent of married women of reproductive age, and enough condoms for 1.9 percent of women (as estimated from annual reports compiled by DKT International). Therefore, social marketing could not have controlled much more than 10 percent of the private sector share for pills at its height, and while it has declined, the commercial outlet share has remained high. For condoms, estimating the social-marketing effect is difficult because many condoms are probably used outside marriage.

Regulation and business climate

Government pricing policy may be the most critical factor in private provision of contraceptives. As with all pharmaceuticals, contraceptive prices are controlled by the Ministry of Health and Population. Distributors are allowed a mark-up of 7.53 percent and pharmacists a mark-up of 13.64 percent (Ravenholt 2000:13).

The general business climate is judged to be favorable. Ratings of the climate of combined political, financial, and economic risk as of June 1998 (ICRG; see World Bank 1999:222–223) classify Egypt as a very safe country for investment. A compilation of indicators of the quality of governance (Kaufmann *et al* 1999) places Egypt somewhat lower.

Business strategies

It appears that government price controls may guarantee some profit and limit competition from government outlets. When the government lowered prices, some products became unprofitable and experienced outages. Newly introduced contraceptives are permitted higher prices and are more actively promoted by manufacturers. For example, a higher priced pill — *Gynera* — with sales of only 100,000 cycles annually, is promoted in preference to an older product with sales of 4,000,000 cycles annually (Ravenholt 2000:23).

Users see current pill prices as very affordable. While only 22 percent of current users pay more than one pound for a cycle of pills, 93 percent stated that they would be willing to pay at least this price (2000 DHS). Price information was not asked of condom users. Only 0.2 percent of currently married non-users who do not intend to use in the future cited price as their reason.

Unlike pills, the availability and prices of injectables show pronounced public-private sector differences. A survey of 1529 pharmacies linked to DHS clusters found that while 63 percent had low-priced pills in stock, only 37 percent had *DepoProvera* on hand (Futures Group 2000). Injectables have been free at public mobile clinics since 1997, and were provided free at public clinics during the six months prior to the 2000 survey (2000 DHS: 92). Health norms stipulate that while pharmacies are allowed to sell the method, only physicians are authorized to administer injections. However, physicians are not allowed to stock and sell pharmaceuticals. Therefore, the commercial sector price includes the pharmacy price for the vial (twice the public sector price) *plus* the physician's fee to administer the injection. Unauthorized pharmacists also apply injections, often at a tenth of the physician's fee (Ravenholt 2000:21).

Egypt summary

Private commercial provision of contraceptives in Egypt has benefited from a stable environment. Price controls may have been beneficial to both users and suppliers, keeping methods affordable to consumers and guaranteeing commercial partners an acceptable return from contraceptive sales. It has helped that the public sector has been charging equivalent prices. A stable system for importation and distribution may also have helped make costs predictable. Private commercial provision of injectables has not been as widespread as for pills. This may be due to its being a newer method requiring physician administration, or to the price differential between public and private provision.

Peru

In Peru, the private commercial share of contraceptive provision has been lower and more variable than in Egypt. Over the decade 1986–1996, the commercial outlet share of pill users rose about 20 points and then fell by the same amount, returning to 38 percent by 1996. For condoms, it rose 30 points to 73 percent by 1996, and stayed there, still lower than in Egypt. The commercial outlet share of injectables fell precipitously — 70 points over a decade — to 12 percent by 1996. Social marketing does not subsidize commodity prices in Peru, but a local NGO socially markets a very low-priced condom, *Piel*.[4]

Market size and potential

From 1986–1996, total contraceptive use rose from 46 to 64 percent of married women of reproductive age. Pill use stayed almost constant, 6.2 percent by 1996, but condom use and injectable use expanded, from 0.7 to 4.4 percent for condoms and from 1.3 to 8.0 percent for injectables. Method users by 1996 were roughly 230,000 for pills, 290,000 for injectables, and 160,000 for condoms.

The decline in commercial sector coverage of pill users was offset by increasing population size, so that the number of women depending on commercial outlets for pills increased slightly. The dramatic increase in use of injectables and condoms coupled with growing population size meant that the number of women depending on commercial outlets increased slightly for injectables and more than tenfold for condoms. Increases in use of pharmacies were dramatic — pharmacies provided no more than 20 percent of private supply contraceptives in 1986, but by 1996 provided 75–95 percent, depending on the method.

Though Peru is more urban (66.7 percent in 1996) than Egypt, its total population is less than half as large, so its urban population is a third smaller than Egypt's. But the smaller size of the potential market is partially balanced by socioeconomic factors. Female illiteracy is much lower in Peru (17%), and per capita GNP is higher ($4,387, at purchasing power parity). The amount Peruvians spend out-of-pocket on health needs is higher — $123 annually per capita. In demographic and socioeconomic terms, Peru's potential market is, on balance, no less favorable to commercial contraceptives than Egypt's.

Distribution and promotion channels

The distribution network has expanded considerably, and at the end of the 1990s appeared adequate. Pharmacies numbered almost 8,000 in 1997, up from 3,000 in 1992, with many small boticas providing over-the-counter drugs and cosmetics (Futures Group 1997a). This implies one pharmacy for about 3,200 people in 1997, a slightly better ratio than in Egypt. As in Egypt, an urban concentration is evident — about half of pharmacies are in Lima. Similarly, contraceptives are a small percentage of pharmacy sales, less than two percent (Futures Group 1997a:13).

All contraceptives are imported. Four companies market 14 brands of pills, seven companies market the 10 most important brands of condoms, and five companies market injectables. The same distribution chain is used as for mass consumption products and reaches the majority of potential customers. Margins for contraceptives vary, but on average the distributor makes a profit of 18 percent over the import price, and the pharmacy a profit of 33 percent less the sales tax (Futures Group 1997a:25).

Brand-name promotion is permitted for contraceptives by special dispensation. Brand-name television advertising of *Microgynon* under an earlier social-marketing program increased *Microgynon*'s share

[4] According to APROPO, *Piel* has never received a subsidy (C. de Luque, personal communication, October 2001).

among commercial brands. What other advertising takes place, and how effective it is, is not reported. The means to advertise are certainly available: With 273 radios, 144 television sets, and 84 newspapers per thousand people, Peru is a leader among developing countries.

Competition

There is clear competition among a variety of different contraceptive methods. The three supply methods combined had 29 percent of all users in 1996, but individually none of them was as popular as the IUD (19%) or female sterilization (15%). However, competition may be keenest among these supply methods themselves: between pills, whose use appears stable, and injectables, whose use is expanding rapidly. Brand competition appears substantial. In a nonrandom sample of 60 pharmacies, 13 pill brands were available, at prices ranging from 5.7 to 33 Peruvian sols (3.53 sols = US$1 in January 2001). Four brands, mainly cheaper ones, were available in more than half the pharmacies. *DepoProvera* was available at almost all these pharmacies at 20 sols, and five other brands of injectables — some up to 40 percent cheaper — were also available. Fourteen brands of condoms were identified in these pharmacies, ranging in price from 1.7 to 5 sols (Futures Group 1997a).

Competition from public services is a greater concern. In the mid-1990s, Peru adopted an aggressive approach to promoting contraceptives, which had always been available for free in public outlets. Promotion of family planning was so pronounced that the national program had to confront concerns about undue pressure for sterilization and instituted corrective reforms in 1998 (USAID 2000).

Donor-supported social marketing subsidized the advertising but not the prices of contraceptives; it was introduced in 1984, followed by brand-name advertising in around 1989. Peak effort seems to have been in the early- to mid-1990s: The social-marketing effort score reached 3.0 out of 4 in 1994 and fell to zero by 1999. In 1993, enough *Microgynon* — the socially marketed brand — was sold to make up approximately 40 percent of commercial sales of pills and to provide contraceptive protection for 1.6 percent of married women of reproductive age (DKT International). However, *Microgynon* was already the leading brand prior to social marketing, and overall commercial pill sales did not increase during the peak period of promotion. The decline in pill social marketing coincided with declining commercial sales in the late 1990s. In contrast, as socially marketed pill sales were declining, socially marketed condoms sales were increasing, providing by 1999 enough product to protect almost one percent of married women of reproductive age. However, as the brand was promoted for both pregnancy prevention and STD protection, its contribution to the commercial share of condoms for contraception is difficult to quantify.

Regulation and business climate

The 1990s saw reforms in regulations affecting pharmacies. Around 1992, liberalization permitted the increase in boticas, while stricter regulations in 1997 — including sanctions on 500 Lima pharmacies for selling expired products — may have had an opposite effect. Government price controls on pharmaceuticals were removed abruptly in August 1990.

Given the economic and legal changes of the 1990s, it is difficult to compare the regulatory climate with that in other countries. Peru's ICRG risk rating (mid-1998) is slightly worse than that of Egypt, and, on six indicators of the quality of governance, Peru is better than Egypt on three and worse on three.

Business strategies

The relatively lower commercial outlet share in Peru cannot be blamed on poor choice of business strategy. Business appears to have been responsive to opportunities, as demonstrated by the rapid expansion of boticas and the current growth of pharmacy chains. It is reported that, after losing some market share to aggressive, free public services, the pharmaceutical industry actively sought ways to recover — including attempting to sell directly to the national program (Futures Group 1997a). Commercial companies do appear to serve the mass market: Pill brands that are most widely available are the lowest priced (Futures Group 1997a:13). The notable exception to this trend is *Gynera* (the same Schering product actively promoted in Egypt). This reflects Schering's corporate policy of promoting only their newest products.[5]

The promotion of free contraceptives at public outlets may have reduced commercial sales. Whether it increased family planning accessibility is debatable — as early as 1991, long before free public services were aggressively promoted, only 0.6 percent of non-users who did not intend to use contraception cited cost as their reason (1991–92 DHS).

Peru summary

Commercial outlets have not controlled as large a market share in Peru as in Egypt, though their share is still substantial. The environment has been fluid, with contraceptive use rising fast. Economic liberalization in the 1990s produced a substantial increase in the commercial share, coincident with a large increase in the number of retail outlets. The rise in the share came to a halt and has been partly reversed as free public provision has become much more aggressive.

Pakistan

The commercial outlet share in Pakistan is higher than in Peru and almost equal to Egypt's. In 1994, 74 percent of pill users and 96 percent of condom users relied on private commercial sources. The figure for injectables is substantially lower, at eight percent. Most of the private supplies, 95 percent for pills and 99.6 percent for condoms, came from pharmacies rather than private doctors or clinics. Subsidized condoms were available beginning in the early 1990s, but subsidized pills were not introduced until 1997.

Market size and potential

Overall contraceptive prevalence has been low, only 18 percent in 1994, as contrasted with 64 percent in Peru. Nevertheless, with Pakistan's larger population the market for these three contraceptives combined was larger than that in Peru: 150,000 for pills, 770,000 for condoms, and 210,000 for injectables.

Pakistan was, however, lightly urbanized (34%) with very high adult female illiteracy (76%). Out-of-pocket health expenditures ($55 per capita annually) are much lower than in Peru but comparable to other less advanced Asian countries. They constitute 77 percent of total health expenditures, among the highest in the developing world. Therefore, the potential market for supply contraceptives is large because of the size of the country and reliance on private spending for health needs, but spread out because of low contraceptive prevalence levels, low urbanization, and poor education.

[5] J. Sclafani, personal communication, 2001.

Distribution and promotion channels

Supplying these needs are 13,000 licensed pharmacies or chemists, plus another 47,000 unlicensed retail outlets (Futures Group 1997b:52). Counting all these outlets would give a ratio of one outlet for about 2,300 people, substantially better than in Peru or Egypt. While these outlets are concentrated in urban and semi-urban areas, often around hospitals, it is reported that many rural doctors maintain small shops of their own to supplement their income. No information is available on the commercial import of contraceptives and distribution networks. However, 93 percent of value of all pharmaceuticals is obtained through private rather than public channels (Futures Group 1997b:52). In addition, anecdotal reports suggest considerable diversion of public drug supplies to the private market, with 15–40 percent leakage considered common (Futures Group 1997b:49).

What had been done, if anything, to advertise and promote supply contraceptives prior to the 1994 DHS is not described in the literature available. The facilities to accomplish this are relatively limited. For instance, Pakistan has 98 radios per thousand people — only a third of that in Egypt or Peru. In the last few years, donor-supported social-marketing programs have actively promoted contraceptives, but there are no population-based surveys to measure the impact of these efforts on market size and shares.

Competition

Other contraceptive methods are available, and female sterilization and traditional methods have higher prevalence than any supply method. Total prevalence is so low that no method can be said to be dominant. Among supply methods, pills reportedly cost 11–13 rupees per cycle commercially. Seven brands were identified in a provider survey, varying in price between chemists and other providers, with a range of 6.3 to 38.0 rupees (58.5 rupees = US$1 in January 2001). Injectables cost 50–80 rupees (Kress and Winfrey 1997:23, 30). A pack of four condoms may cost two to four rupees (Weiss 1997:10). Commercial supplies of pills and condoms are generally within the range of what consumer focus groups indicate they are willing to pay, but injectables cost somewhat more (Weiss 1997:10–11).

In the one cross-national comparison possible, the ex-distributor cost of one brand of pills available in Pakistan compares favorably with its cost in other developing countries. It is a fourth to a sixth of the cost in the Philippines, Taiwan, and Jordan, slightly below the cost in Indonesia, and somewhat higher only than the cost in Egypt (Mallari *et al* 1999:1).

The national family planning program dates back to 1965 and provides supplies presumably for free at public facilities; ancillary fees may also be charged, such as two rupees for an examination by a government doctor (versus 10–30 rupees by a private doctor). Nevertheless, supply is erratic, and even hospitals do not have good supplies of medicines. Consequently, the government family planning program appears to have accomplished little (Khan 1996).

Social marketing appears to be making an increasing contribution in Pakistan. Socially marketed pills were not sold until 1997. Socially marketed condoms were available earlier. In the early 1990s social-market condom sales provided contraceptive protection sufficient for over two percent of married women of reproductive age (though they may not have been used with married women), and were double this level by 1997.

Regulation and business climate

The regulatory climate is generally unfavorable, especially as reflected in poor ratings on government effectiveness and corruption. Paradoxically, this may benefit private providers, in that it hampers effective public provision as well. Only Indonesia (which was in economic crisis at the time of the ratings) is rated as more risky than Pakistan.

Business strategies

No specific discussion of business strategies is available. From the fact that contraceptive prices appear relatively low in international comparisons and are in a range that even the poorest segment of the population can afford (Kress and Winfrey 1997:23), one might infer that the mass market is being served. Whether companies place greater or less emphasis on higher-priced products cannot be determined from the literature. In Pakistan as in Peru, low-priced pills are considerably more available at outlets than high-priced pills. Prices are actually much lower in dollar terms in Pakistan than in Peru, but the relationship of price to availability is similar.

Pakistan summary

Pakistan may illustrate success of the private sector by default. With little competition from the public sector, private providers have had the time and opportunity to make their contributions — small in total size but accounting for a proportionally large portion of the market. Given the large role private providers play in health care generally, a large role in contraceptive provision is not surprising.

Indonesia

In Indonesia, the commercial outlet share of contraceptive provision rose substantially over the 1990s. There is no evidence to date of notable subsequent decline. From 1991 to 1997 the private commercial share for pills rose from 14 to 64 percent, for condoms from 56 to 83 percent, and for injectables from 40 to 67 percent. At the beginning of the 1990s the private share in Indonesia was low for Asian countries — but by 1994 and 1997 it was relatively high.

What is different in Indonesia is that pharmacies play a small role: In 1997, they provided 12 percent of private-sector pills and almost no injectables. Only for condoms do pharmacies provide most of the coverage (84% of private-sector condoms). Private doctors and clinics provide the remainder of private-sector contraceptives, including substantial informal sales of government-procured product.

Market size and potential

Injectables and pills were the two leading contraceptive methods in 1997, used by 21 and 15 percent, respectively, of married women of reproductive age. Condoms were at only one percent. The current market for injectables and pills is one of the largest in the world: 7.7 million injectable users, 5.6 million pill users, and 250,000 condom users.

Indonesia's market is fragmented by geography and social factors. Urbanization is relatively low at 37 percent in 1997. Out-of-pocket health expenditures, at $26 or 47 percent of total health expenditures, are lower in Indonesia than in Pakistan or the Philippines.

Paying for contraceptives may not be a substantial problem, even though pill prices were more affected by the economic crisis than prices of other methods. Annual retail prices rose from an estimated 10,000 rupiah in 1997 to 50,000 rupiah in 1999 (9,405 rupiahs = US$1 in January 2001), but were still less than two percent of per capita annual expenditures of poor households of 3,600,000 rupiah (Molyneaux 2000). The market potential in Indonesia is not necessarily limited.

Distribution and promotion channels

Commercial distribution of contraceptives was accomplished in 1992 through 3,500 pharmacies, equivalent to one for every 44,000 people (Ravenholt 1996a:12). Smaller outlets, as well as pushcart kiosks, are more numerous (about 1 per 7,000 people) but are not allowed to sell any prescription drugs, including oral contraceptives. Some 500 companies distribute drugs to pharmacies, often forbidding them to carry competing brands. Wholesalers typically add 17–21 percent for their services, and pharmacies add 30–50 percent. Foreign distribution companies are not allowed. The system as a whole is reported to be inefficient (Tribble *et al* 1987:32; Ravenholt 1996a:12).

Competition

Supply contraceptives do not face much competition from other methods. Sterilization is not promoted as a program method, and the IUD is declining in popularity. Norplant may be a potential competitor, but its prevalence had only reached six percent by 1997.

Among commercially distributed product, some variety does appear in the market. One listing shows a price range among six pill brands from 1,800 to 6,000 rupiah and a range among four injectables from 4,600 to 5,930 rupiah (Molyneaux 2000). These brands compete with product provided through public clinics as well as by private doctors.

Before 1990, the National Family Planning Coordinating Board distributed contraceptives for free. Subsequently, the program began to encourage payment, first to promote a shift to privately procured methods and, second, to use nominal payments as a means of improving the image of public commodities. Public outlet prices are now probably within the range of commercial prices.

Contraceptive social marketing was introduced in 1986, and effort increased over the 1990s: experts gave the effort in social marketing a perfect score of 4.0 for 1999. Yet pills socially marketed as part of the Blue Circle campaign have reached a small proportion of the potential market, providing contraceptive protection sufficient for only 0.5 percent of married women in the 1990s (DKT International). Similarly, socially marketed condoms provided protection sufficient for 0.6 percent of married women by 1999, down from earlier years. This is sufficient to cover 20 percent of the condom market.

Although Blue Circle is often cited as a success story, its significance may lie less in product sold than in other effects on the market. In particular, it may have encouraged the private sector to charge lower rates or at least to hold the line on prices.[6] With commercial corporations paying royalties to use the Blue Circle logo, the promotional activities involved in social marketing have apparently had a lasting impact.

[6] R. Ramlow, personal communication, 2001.

Regulation and business climate

The various public campaigns to introduce charges for contraceptives, as well as to promote specific priced brands, constitute the most important aspect of the regulatory environment. The industry was deregulated in 1989, and the limited number of pharmacies does not appear to be due to any pharmacist shortage or licensing requirements. What may be problematic are regulations limiting pharmacies to selling pharmaceuticals, rather than consumer products of all types. The intent may be to prevent contamination from other products, but the effect is to limit the viability of outlets in outlying areas (Ravenholt 1996a).

The general business climate appears quite unfavorable: as of mid-1998 Indonesia's risk rating was among the worst in the developing world. Presumably it was better earlier — before the economic crisis. Moreover, across six composite indicators of governance, Indonesia is worse than either Egypt or Peru.

Business strategies

It appears that the mass market is being served, as commercial prices appear to be within the reach of the majority. Fully 75 percent of pill users pay commercial-level fees (2,000 rupiah or more), and 80 percent of injectable users do the same (6,000 rupiah or more; Molyneaux 2000). Whether distributors nevertheless place more emphasis on higher priced brands cannot be determined.

Indonesia summary

Indonesia presents several contradictions. It has a large private commercial share, but quite a small pharmacy share. Most of the private-source contraceptives were provided by private doctors passing on publicly procured product. It has a potentially large market but little household income devoted to health, a largely unregulated but relatively tiny and inefficient distribution system, dominance of supply methods of contraception but the commercial opportunity being undercut by free or subsidized public provision. Business strategies in the mid-1990s do not appear to have been capable of doing more than responding to the changing situation. Government strategies appear to have been critical in determining how the private commercial sector in contraceptive provision has developed — or failed to develop.

The Philippines

The private commercial share of contraceptive provision in the Philippines is smaller than in Indonesia. In 1998, only 23 percent of users relied on commercial outlets for pills, 57 percent for condoms, and eight percent for injectables — far lower than similar percentages in Indonesia. Pharmacies provide most of the commercial sector condoms, almost none of the injectables, and pills for 15 percent of pill users. Eight percent of Philippine pill users rely on other commercial-sector providers.

Market size and potential

The 1998 contraceptive market for condoms in the Philippines was 180,000 users. The market for pills was 1.1 million women, and the market for injectables approximately 300,000 users. These numbers are much smaller than the market in Indonesia but comparable to the market in Egypt for pills, and seem sufficiently large to be commercially attractive.

The Philippine population is as geographically fragmented as Indonesia's but much more urbanized (69%) and more literate (6% adult female illiteracy). Per capita income at purchasing power parity is also more than 50 percent higher than in Indonesia, and the population spends more out-of-pocket for health — $49 per capita annually. These characteristics make an attractive market for contraceptives. However, contraceptives account for less than 0.5 percent of pharmaceutical sales overall, or about 110 million pesos excluding condoms (Mallari *et al* 1999:ix; 49.5 pesos = US$1 in January 2001).

Distribution and promotion channels

The Philippines has 8,375 retail pharmacies (in 1994; Ravenholt 1996b:13), or one for every 8,000 people, a substantially better ratio than in Indonesia. Supplying the Philippine market should not be difficult. Pharmacies are concentrated in urban areas, especially around Manila. Only pharmacies are legally allowed to dispense ethical products, a provision variably enforced.

Major pharmaceutical manufacturers are represented in the Philippines. Except for Wyeth (ranked third by market share for all pharmaceuticals), those selling contraceptives tend to be medium-size players in the Philippine pharmaceutical industry. Importation of contraceptives is not problematic, though the paperwork may be onerous to obtain the authorized exemption from duty or to import additional quantities when needed. Distribution is accomplished through five leading independent distributors, who charge a negotiated percentage fee, usually 5–30 percent, across all a manufacturer's products.

Media outlets are generally available, and the Philippines has more newspapers per capita than many other Asian countries. Advertising for ethical products is legally prohibited. But a greater problem is the fear of organized opposition from the Catholic church: The Church campaigned against Upjohn products after the promotion of *DepoProvera*, and Upjohn pharmaceutical sales took more than a year to recover. Catholic opposition may also affect the products that pharmacies carry. Nevertheless, a social-marketing campaign has been carried out for condoms, succeeding in establishing brand-name recognition. Contraceptive manufacturers also promote their products to obstetricians and gynecologists as well as some general practitioners identified as being high-volume prescribers (Ravenholt 1996b:12).

Competition

Other methods besides supply methods are generally available. Female sterilization commands a slightly greater share of contraceptive users than pills. Even more contraceptive users rely on traditional methods, especially rhythm. A substantial number of physicians focus on natural methods.

A range of supply methods is available commercially. At least a dozen brands of pills are sold, at prices ranging from 26 to 93 pesos, not counting a 20-peso brand formerly promoted in a social-marketing program. Wyeth controls the market, with almost two-thirds of sales and the single best-selling brand in 1995–97 (Mallari et al 1999:10–12). The leading brand held its position although Wyeth had done no marketing for years, suggesting both the potential of earlier promotion and the dearth of recent efforts. Three brands of injectables are priced from 64 to 182 pesos. The variety of condom brands available is not reported, but the most popular one had been the focus of social marketing. Product donated to the public sector is also available at some pharmacies at relatively low prices.

Public services competing with pharmacies. Publicly supplied contraceptives are free or require a small donation. In contrast, commercial contraceptives appear overpriced for the region. In 22 cross-country comparisons of prices of eight pill brands and *DepoProvera*, distributor prices were higher in the Philippines in all but two cases, for which they were essentially equivalent. In almost half the

comparisons, the Philippine distributor price was at least twice as high (Mallari *et al* 1999:1). Why this is so is unclear. The components of ex-distributor pharmaceutical costs have been estimated at 30–40 percent for the transfer price; 12–24 percent for financial charges, clearing charges, custom fees, and VAT; and 40–60 percent gross profit margin. Retailers may add a 5–30 percent markup.

Socially marketed pills have provided a lower-cost alternative to commercial brands. Social marketing was introduced in 1990 and social-marketing pill sales appear to be increasing — providing enough contraceptive coverage for almost one percent of married women of reproductive age by the end of the 1990s. This covers at least a quarter of commercial sales. Sales of socially marketed condoms have been on a similar upward path, providing slightly more coverage. These sales are sufficient to cover all of the demand for condoms for family planning within marriage, but other uses of condoms are not accounted for here. Given relatively high commercial prices, social marketing probably has greater potential in the Philippines than in the other countries considered, though it is itself limited by competition with free government supplies and by religious opposition to contraceptive advertising.

Regulation and business climate

The government does not regulate commercial prices. It enacted a modern series of laws to regulate private practice, but practitioners consider many of these impractical (Griffin *et al* 1992:32). The Philippines has a favorable business risk rating of 67, better than other Asian countries and better also than Peru. Ratings of governance are also relatively positive, leading the Asian countries in four categories and coming second in the other two categories.

Business strategies

As a percentage of total pharmaceutical sales, contraceptives account for less that 0.5 percent. However, for the specific companies involved, contraceptives can be more important, ranging from 0.6 to 14.5 percent of sales (Figure 4 in Mallari *et al* 1999:8). Though contraceptives may be of little importance for most retailers, they are more important for some manufacturers. Whether the latter put much effort into marketing is arguable. Some have not bothered to apply for the tariff exemption, and few seem to be aware of public family planning program policies or of the opportunities these may provide. Lower priced pill brands do not appear more available than higher priced brands, suggesting that mass marketing of low priced contraceptives is not a business priority.

Philippines summary

The Philippines presents as many contradictions as Indonesia. Its pharmacy share is higher than in Indonesia. How is this possible with practically free public services? Perhaps weakness in the public program or dissatisfaction with its services partly offset the cost advantage. The commercial sector appears to exercise little initiative in developing its share, maintaining prices that are higher than in other developing countries. Lower priced brands have no larger a market share than higher priced ones. Religious opposition to mass marketing of contraceptives may exert some influence.

Comparisons Across Cases

Table 1 compares the country cases. Four general caveats should be noted:

- The factors considered are not strictly comparable across countries. For instance, the number of commercial pill brands was determined in different ways in the different country reports, and the relative availability of pill brands was totally unavailable for some countries. Similarly, the number of pharmacies (used in calculating persons per pharmacy) depends on varying country definitions of retail outlets.
- Some of the comparisons show contradictory outcomes. We hypothesized that stronger demand (as reflected in the number of pill users) would produce a higher commercial outlet share. This was not always found.
- Variables related to the private share do not always behave in the expected way. Female illiteracy, for instance, appears related to a higher commercial share — if the Asian countries are viewed separately from the others. At the same time, low income appears related to a higher share — if the Asian countries are again considered separately. Both these relationships are the reverse of those initially hypothesized.
- These five countries are obviously a small, select sample. In a larger sample, some relationships could appear different, and could easily be reversed.

Nevertheless, some generalizations can be drawn across the five country cases.

Market Size & Potential

The number of users does not have a consistent relationship with commercial outlet share. Treating the Asian countries separately, a fairly consistent relationship appears for three broad socioeconomic indicators — but it is the reverse of that expected. A higher private share goes with lower urbanization, lower female literacy, and lower income. The one demand variable that appears to work as expected is out-of-pocket health costs. These are very high as a proportion of all health costs in Egypt and Pakistan, where the private share is higher, and medium in the other countries.

Distribution & Promotion Channels

Across the three Asian countries, more pharmacies and a higher density of pharmacies appear to be related to a higher pharmacy outlet share. Having a larger number of distribution companies (as in Indonesia), or having major international pharmaceutical companies mostly in charge (as in the Philippines) does not appear to favor commercial outlets. Better mass media availability appears related to a lower commercial share — contrary to our hypotheses. Obstacles to advertising may partly explain this, but such obstacles cannot be systematically compared.

Competition

Competition from other methods could be a factor in the commercial share for supply methods. Lack of access to female sterilization may lead to use of supply methods instead, favoring the commercial sector. Similarly, the private commercial share is lower where traditional methods are more prevalent.

More important than competition between methods may be competition from the public sector. Family planning program effort scores do not differentiate countries clearly and, as noted in previous research, the effects may be curvilinear. The price of public contraceptives is arguably the most important issue. Relatively higher prices of public services seem to be related to a higher commercial outlet share. There is an important exception, however. Free public services in Pakistan go with a high private share. Other factors probably have to be considered simultaneously — possibly, in this case, the adequacy of public services.

Social-marketing programs may increase the private share, though their contribution in terms of direct sales looks small. Given the volume of social-marketing sales, only a few percent of married women could have benefited directly. As suggested for Peru, higher social-marketing sales do not appear to raise overall commercial shares. It could be argued that social-marketing sales represent not an increment to private provision but a substitution away from other, unsubsidized sales.

However, social marketing has other important effects. The advertising and other promotion involved may outlast the specific campaign in the public mind, as in the Philippines. Social-marketing efforts may also affect the prices of other brands, as is reported for Indonesia.

Regulation & Business Climate

Ratings of the business climate and regulatory environment do not appear to explain the contrasts in the private share. If anything, better scores in these areas are related to lower commercial shares. One might argue that the overall business situation is largely irrelevant for such a minor commodity as contraceptives. Perhaps specific regulations affecting pharmacies are relevant, but which ones matter more cannot be determined from the case studies.

Business Strategies

The range of brands and prices available in the commercial sector may be indicative of business strategies. However, the range of pill brands does not seem to be related to commercial outlet share. Prices are highest (in dollar terms) in Peru, followed by the Philippines — suggesting that high commercial prices may depress the commercial outlet share. Alternatively, commercial distributors may be satisfied with higher profit margins and lower volumes if they do not see opportunities for wider commercial expansion. An interesting finding is the way availability relates to price. While cheaper brands are more available than more expensive brands at retail outlets in Peru, Egypt, and Pakistan, this is not the case in the Philippines.

Table 1: Comparisons of cases

Factor	Egypt	Peru	Pakistan	Indonesia	Philippines
Private share of supply contraceptives					
Pills	Very high	Medium and variable	Medium	Rising to medium, but few from pharmacies	Low, but mostly pharmacies
Injectables	Medium falling to low	Very high falling to low	Medium falling to low	Medium rising to high	Low
Condoms	Very high	High	High to very high	High and rising	Medium
Demand					
Pill users	Many	Few	Few	Very many	Many
Condom users	Few	Few	Medium	Few	Few
Urbanization	Medium	Very high	Low	Low	High
Female literacy	Low	Medium	Very low	Medium	High
Per capita income	Low	High	Extremely low	Very low	Medium
Out-of-pocket health costs (US$)	High	Very high	Medium	Low	Medium
Percentage of total	Very high	Medium	Very high	Medium	Medium
Supply					
Persons per pharmacy or similar outlet	4,000	3,200 after growth in early 1990s	2,300	6,200, but 44,000 excluding small outlets	8,000
Distribution system	Government importer-distributor, recently supplemented with private companies	4 companies for pills, 7 for condoms, 5 for injectables	93% of value for all pharmaceuticals come through private channels	500 distribution companies, inefficient, none foreign; pharmacies cannot carry competing brands	Major pharmaceutical companies
Media availability	High	Very high	Low	Medium	High
Advertising obstacles	Expensive	None reported	None reported	None reported	Catholic opposition
Competition					
Other methods	Little sterilization	High traditional	Little sterilization, nevertheless the leading modern method	Little sterilization	High traditional
Family planning program effort	Medium	Medium	Low	Very high	Medium
Price of public contraceptives	Comparable to cheaper commercial prices	Free since mid-1990s, aggressively promoted	Largely free	Payments rising over time	Largely free
Social marketing	Since 1979, no subsidy, declining effort	Since 1984, no subsidy, declining effort	Since 1986, but mainly in late 1990s	Since 1986, increasing effort, may have influenced commercial prices	Since 1990, increasing effort
Percent of MWRA who could be protected by social-marketing product sold	Pills 1994: 1.2 1999: 0.0 Condoms 1994: 1.2 1999: 0.0	Pills 1994: 1.1 1999: 0.0 Condoms 1994: 0.3 1999: 1.0	Pills 1994: 0.0 1999: 0.3 Condoms 1994: 2.2 1999: 2.0	Pills 1994: 0.4 1999: 0.6 Condoms 1994: 0.02 1999: 0.6	Pills 1994: 0.2 1999: 0.9 Condoms 1994: 0.6 1999: 1.2
Regulation					
Business risk rating	Good	Good	Poor	Very poor	Good
Regulatory effectiveness	Poor	Good	Very poor	Poor	Good
Pharmacy regulation	Prices controlled, not too low	Liberalized in early 1990s	Pharmacies cannot sell other products	Modern regulatory regime	Modern laws

Factor	Egypt	Peru	Pakistan	Indonesia	Philippines
Business strategy					
No. commercial pill brands	9 combined OC 2 progestin-only	13	7	6	12
Pill prices, local currency (US$)	.65–15.3 ($.17–3.97)	5.7–33 ($1.61–9.35)	6.3–38 ($.11–.65)	1,800–6,000 ($.19–.64)	20–93.4 ($.40–1.89)
Availability of pill brands	Cheaper more available	Cheaper more available	Cheaper more available	Cheaper not more available	
Other observations	Not hurt by price controls; companies focus on newer, high price brands	Number of pharmacies increased after liberalization	May benefit from ineffective government programs	Prices generally within reach of the poorest	High prices; lack of business interest
Synthesis					
	• Private share high • Prices controlled, but public service charges comparable • Stable import and distribution system, mainly governmental • Lower private share for injectables, with price differential	• Private share medium • Fluid setting, contraceptive prevalence rising fast • Liberalized pharmacy rules increased private share • Public provision became more aggressive, reversing trend	• Private share high Contraceptive prevalence low • Public services free, inefficient • Considerable dependence on private provision of health care generally	• Private share medium, mostly doctors, little pharmacy share • Large market but little health spending out-of pocket • Inefficient distribution of pharmaceuticals • Public services formerly free, charges rising	• Private share low, but mostly pharmacies • Free public services • Little commercial initiative, high prices, low availability of cheap brands • Religious opposition to contraceptive promotion

Cross-National Regressions

To confirm the relationships uncovered in the case studies and address the inconsistencies that were found, multiple regressions were conducted on a larger number of developing countries. The dependent variable to be predicted is the commercial sector share of each supply method. While it was not possible to obtain reliable quantitative estimates of commercial products versus subsidized social-marketing brands and leaked product, the regressions pay particular attention to social marketing, with special analysis devoted to its effects.

Method & Data

Separate regressions of commercial outlet share were produced for pills, injectables, and condoms, using the latest share data for up to 62 countries (several are missing data, especially when no injectable users are reported). As in previous research (Bulatao 2000), the dependent variables in the regressions are logits of the private commercial share.[7]

The following indicators were selected to represent elements of the framework. Choice of indicators was determined in part by availability of data.

- **To reflect market size and potential:** contraceptive prevalence (and a squared term), the urban percentage, number of urban women of reproductive age, female illiteracy, and out-of-pocket health expenditures as a percentage of all health expenditures and in per capita dollar terms.
- **To reflect factors that facilitate contraceptive distribution:** private investment as a percentage of gross domestic investment and the normalized road index.
- **To reflect competition from other contraceptive methods:** contraceptive prevalence, separately, of female sterilization, IUDs, and traditional methods.
- **To reflect competition from the government program more generally:** the family planning effort index and two subscores, for method access and marketing. (The squared term for family planning effort, used in a previous study, is left out on the assumption that including subscores will deal with nonlinearity.)
- **To reflect government regulation:** the composite score for regulation as a factor in governance.

The measures of commercial share to be predicted do not separate out socially marketed product. This is appropriate because the evidence from the case studies suggests that social-marketing sales do not increase the overall level of commercial outlet sales. If social-marketing sales partly substitute for purely commercial sales, separating the two could produce misleading regression results. However, the case studies also suggest that the promotional and other efforts connected with social marketing may have broader and more strongly positive effects on the commercial sector. We therefore introduce social-marketing indices as independent variables in a second stage in predicting the commercial share.

[7] These are not logit regressions, since the data are not binomial. Rather, the percentages are transformed using a logit transformation — log [p/(1-p)], a technically appropriate transformation because otherwise the data would be bounded between 0 and 100 percent.

After the initial regressions with the variables above, and after eliminating variables with no significant effect, we include three measures of social marketing:

- the number of years since social marketing was introduced;
- social-marketing effort, a component of the marketing index; and
- social-marketing sales for pills and condoms, expressed as the proportion of married women of reproductive age who could receive contraceptive protection for a whole year from these sales.

We also look at interactions between selected variables and social marketing to determine if any effect is context-specific.

Results

The regressions in Table 2 indicate that private shares can be reasonably well predicted across countries. While all the independent variables were tested, the table lists only those variables showing significant results for each method. The specific predictors that appear important vary by method, but there are similarities, and each major factor in the framework (apart from business strategies, which are not operationalized) contributes to the private share for at least one contraceptive method.

Market size and potential

The importance of potential market size is confirmed by the significant contribution of the number of urban women of reproductive age to private shares for pills and injectables: The same result would be obtained by using only urban married women. For condoms, the significant indicator of potential market size is the proportion of the population that is urban. Since condoms are marketed to both men and women, the number of reproductive-age women may be less important than total population size. None of the other indicators of the potential market is consistently related to commercial outlet share across methods, nor are do they reach the $p<.05$ level of statistical significance.

Private spending on health fails to show an impact on the private sector share of injectables or condoms. There is a borderline association between higher out-of-pocket spending on health and use of commercial outlets for pills, but the relationship is negative — and unexplainable — for percent of total health spending that is out-of-pocket.

Distribution and promotion channels

Indicators of retail capacity used in the case studies, such as pharmacies per capita, were not available for enough countries to use in the regression analysis. Only one of the proxy measures used for ease of commercial distribution — the normalized road index — shows an effect; it appears to slightly favor the commercial share for pills. (An alternative proxy, the proportion of roads that are paved, shows higher statistical significance.)

Competition

We use family planning effort scores and selected components of family planning effort to study the impact of competition from the public sector as well as government efforts to promote overall access. Higher overall family planning effort scores tend to drive down the private commercial share for pills and injectables, substantiating earlier results (Bulatao 2000). However, the score for method access works in the opposite direction, raising the private commercial share. Moreover, the marketing score raises the commercial outlet share for all three methods. These results suggest that greater public sector effort is generally unfavorable to the private commercial share. However, a relatively greater emphasis on making methods accessible and a greater relative emphasis on marketing efforts for contraceptives — in contrast to other areas of program effort — could encourage private provision.

Regulation and business climate

It is difficult to identify comparable government measures across countries. A lighter regulatory burden on business generally, as reflected in one composite governance indicator, appears to favor a higher private share for injectables but is not related to commercial outlet share of pills or condoms.

Contraceptive prevalence

The effect of contraceptive prevalence is problematic. We expected the private share to rise with prevalence, essentially as the market for contraception expands. Instead we find no effect for pills and a curvilinear effect for the other methods, such that the private shares for injectables and condoms are higher when prevalence is below 20 or above 70. If contraceptive prevalence in fact reflects the size of the market, one might argue that private services can find a more satisfactory niche when the market is small (and government is not deeply involved) or large (and government cannot cope with all the demand), but are squeezed out when it is of medium size.

Looking at the effect of prevalence for specific methods, we find traditional method prevalence positively related to the private share for pills and condoms, and IUD prevalence negatively related to the private share for condoms. These results are stronger for condoms and are not easily explained. It may be that high traditional method prevalence reflects the failure of public services to provide modern methods — a failure that opens the door to greater private provision. IUDs, on the other hand, tend to be a public sector method; it may be that countries with higher IUD prevalence show higher overall public sector share, depressing commercial provision.

Table 2: Regressions for the commercial outlet share of pills, injectables, and condoms

Variable	B	t	p<
Commercial outlet share for pills (logit)			
Urban women 15–49 (log)	0.380	2.65	0.012
Health costs out-of-pocket (%)	-0.024	-1.89	0.067
Out-of-pocket costs in US$	0.007	1.73	0.093
Road index	0.005	1.79	0.082
Traditional methods prevalence	0.063	1.82	0.077
Family planning effort	-0.091	-3.84	0.001
Effort on method access	0.751	1.79	0.083
Effort on marketing	0.979	3.45	0.002
Constant	-4.262	-2.32	0.026
R2 (n)	0.46	(45)	
Commercial outlet share for injectables (logit)			
Contraceptive prevalence	-0.126	-2.50	0.017
Prevalence squared	0.002	2.58	0.014
Urban women 15–49 (log)	0.348	2.15	0.039
Female illiteracy (%)	-0.026	-1.93	0.061
Family planning effort	-0.123	-4.60	0.000
Effort on method access	1.348	2.89	0.007
Effort on marketing	0.959	3.01	0.005
Composite regulation index	1.170	2.34	0.025
Constant	-0.742	-0.32	0.754
R2 (n)	0.63	(44)	
Commercial outlet share for condoms (logit)			
Contraceptive prevalence	-0.121	-3.23	0.002
Prevalence squared	0.001	2.51	0.016
Urban percentage	0.041	3.67	0.001
IUD prevalence	-0.050	-2.72	0.010
Traditional methods prevalence	0.107	3.26	0.002
Effort on marketing	0.538	2.70	0.010
Constant	-0.362	-0.57	0.575
R2 (n)	0.56	(49)	

Social marketing

If socially marketed brands attract users who could otherwise not afford to pay full commercial prices, they should contribute to higher commercial share because of the additional sales they generate. Using data compiled by DKT International, we estimate the proportion of women of reproductive age who could be protected by social-marketing sales of pills and condoms[8] during the same year for which survey data of commercial share were taken. For injectables we use the total coverage for all socially marketed methods.

To reflect longevity of social marketing within the country we use an index, social marketing duration, calculated as the number of years between the start of any social-marketing program (also as reported by DKT International) and the survey date for the private-share data.[9] To reflect effort we use the social-marketing indicator from the family planning effort scores.

Table 3 shows the results of adding these social-marketing indicators to the regressions. As found in the case studies, increasing social-marketing sales does not increase commercial outlet share

[8] Method-specific conversion factors were used to estimate couple-years of protection, which were then divided by the population of married women of reproductive age.

[9] This index may overestimate program duration because it does not exclude periods when social marketing programs were inactive or had been discontinued.

for any method. Longer duration of social marketing is associated with higher commercial share for condoms and pills. Higher social-marketing effort, as measured by family planning effort scores, increases commercial outlet share for injectables (despite the fact that injectables themselves have seldom been socially marketed) and is marginally significant for pills.

In addition, the principal predictors of commercial share remain significant when social-marketing indicators are included. Commercial share is higher in more urbanized countries, and increased public program effort is associated with lower commercial share of pills and injectables. Thus, it could be argued that the apparent determinants of overall commercial outlet share generally hold for commercial sales unsubsidized through social marketing.

Table 3: Regressions for the private share, controlling for social marketing

Variable	Pills			Injectables			Condoms		
	B	t	p<	B	t	p<	B	t	p<
Contraceptive prevalence				-0.162	-3.26	0.003	-0.149	-4.47	0.000
Prevalence squared				0.002	3.12	0.004	0.001	3.10	0.004
Urban percentage							0.042	4.25	0.000
Urban women 15–49 (log)	0.347	2.35	0.025	0.439	2.82	0.009			
Health costs out-of-pocket (%)	-0.017	-1.39	0.175						
Out-of-pocket health costs ($)	0.009	2.28	0.030						
Female illiteracy (%)				-0.044	-3.06	0.005			
Road index	0.004	1.60	0.119						
IUD prevalence							-0.025	-1.43	0.161
Traditional methods prevalence	0.050	1.47	0.151				0.103	3.34	0.002
Family planning effort	-0.065	-3.29	0.003	-0.105	-4.76	0.000			
Effort on method access	0.293	0.72	0.476	1.152	2.66	0.013			
Composite regulation index				0.713	1.45	0.158			
Social-marketing coverage[a]	0.064	0.22	0.828	-0.029	-0.20	0.845	-0.070	-0.48	0.632
Social-marketing duration	0.098	2.00	0.054	0.038	0.65	0.522	0.156	4.10	0.000
Social-marketing effort	0.322	1.78	0.085	0.715	3.36	0.002	0.124	0.88	0.385
Constant	-3.846	-2.11	0.043	-0.439	-0.20	0.844	0.290	0.55	0.587
R2 (n)	0.57	(42)		0.73	(41)		0.73	(43)	

[a] Coverage by the specific method is used for pills and condoms, total coverage by all methods for injectables.

Social marketing might have more of an impact in some settings than in others. We tested this possibility by adding interaction terms with social-marketing effort to the regressions for pills and condoms.[10] Two interactions emerge. For pills, commercial outlet share increases with social-marketing effort only when traditional method prevalence is low, under 10 percent. When traditional method prevalence is higher, social-marketing effort actually seems to be related to a lower private commercial share. Condoms show a similar interaction effect with traditional method prevalence, but the opposite effect with IUD prevalence (social-marketing effort is related to higher commercial outlet share for condoms when IUD prevalence is high). Furthermore, social marketing of condoms has a greater effect where female illiteracy is higher and little effect once illiteracy is down to around 30 percent.

The results for social marketing have several implications.

First, since the major effects from the regressions without social marketing are not greatly affected by introducing social-marketing indicators, one can argue that these effects probably hold for commercial, unsubsidized sales.

[10] The resulting coefficients, for the social marketing terms and these interactions only, are shown in Appendix 1.

Second, social-marketing impact on commercial outlet share appears to have little to do with volume of social-marketing sales (represented as "social-marketing coverage" in Table 3). Across the developing world, these sales tend to be insignificant in the context of the total commercial share for supply methods.

Third, longstanding or vigorous social-marketing effort clearly raises the private commercial share. Perhaps the promotional aspects of social marketing are critical in energizing consumers, or the outreach involved to commercial providers stimulates their interest and activity. The informational benefits of social marketing seem to be illustrated in the greater contribution it makes where female illiteracy is high. The way its contribution depends on prevalence of other methods — especially traditional methods — suggests, furthermore, that social marketing has complex effects. It does not just contribute sales, but may more broadly affect contraceptive choice and use — and possibly reduce dependence on public services.

This analysis has not dealt with the possibility that social marketing is introduced where the commercial outlet share is already high or other factors make it likely to rise. It should be noted that these regressions are based on fairly small samples of countries and are sensitive to changes in the countries included or the specific indices used. They suggest, nevertheless, that the general classes of factors identified in the framework are indeed relevant to the private commercial share.

Conclusions

The potential market for contraceptives is an important consideration. None of the case study countries is so small as to preclude commercial activity in contraceptives, but the size of the potential market can make a difference to the level of private sector activity. Statistical analyses suggest that private sources may be able to find a more satisfactory niche when the market is small (and government is not deeply involved) or large (and government cannot cope with all the demand), but may be squeezed out by an active government program when the market is of medium size.

To get contraceptives into the hands of consumers, an appropriate private distribution network is necessary. Better coverage by the retail network, as in Egypt and Pakistan, as well as in Peru after regulations governing pharmacies were liberalized, appears to be related to a higher private share. The regressions suggest that a better network of roads (to deliver product or facilitate consumer access to outlets) also increases private share, particularly for pills.

The price of public contraceptives is arguably the most important component of competition. Smaller differences between public- and private-sector prices are associated with greater private sector share. Price may be less relevant where services are of poor quality, as in Pakistan, where a somnolent public program may have allowed private services to flourish.

The potential market is not necessarily limited by low incomes. As has been argued for Indonesia (Molyneaux 2000), commercial prices of supply contraceptives are affordable for the typical household. This point has also been made in other research (e.g., Janowitz *et al* 1999). The amounts spent out-of pocket on health care also suggest that, where sufficient motivation exists, consumers can access the commercial sector for contraceptive supplies. Nevertheless, some caution is appropriate, particularly in providing for the poorest segment of society. Free or reduced-price public services may still have a role, in conjunction with attempts to segment the market, but segmentation efforts are not well described in our cases (but see Winfrey and Heaton 1996 for Indonesia) and cannot be addressed.

What distributors do may be affected by government regulation, such as rules in Indonesia that prohibit pharmacies from stocking anything but pharmaceuticals. Other regulations, however, are seldom enforced, such as those limiting ethical products to larger, licensed pharmacies or restricting their advertising. In a few instances, regulation actually may be beneficial for private providers.

Although information on the business strategies adopted by manufacturers and distributors was available for only a few of the case study countries, it appears that private providers generally treat contraceptives as a minor commodity. The evidence from Peru, Pakistan, and Egypt suggests that some distributors may make cheaper methods more available. In other countries, distributors may avoid any effort in this direction, as in the Philippines, where the private share is lower. Distributors may also attempt to restrict outlets from carrying competing brands, as in Indonesia.

Effective social marketing appears to raise the commercial outlet share. It does this not by adding subsidized sales: social-marketing sales do not appear to enhance the overall private commercial share. Instead, it does this through promotional and related activities. Greater program effort in social marketing and longer exposure to it are related to a higher private share. The utility of promoting specific brands of contraceptives is large and largely unrealized. Both in Egypt and the

Philippines, previous promotional campaigns appear to have lingered in the public memory, so that the specific contraceptives involved are still in demand.

Table 4 summarizes the factors which appear to have an impact on the private commercial share for supply contraceptives.

Table 4: Factors shown to be related to higher private commercial shares for supply contraceptives

Factor[a]	Evidence for effect
Competition	
Relatively high prices for public services	Egypt; Peru trend; Philippine prices; but not Pakistan
Weaker public program, reflected in lower family planning effort scores	Pakistan; program improvement in Peru; regressions for pills and injectables
Relatively greater program stress on method access	Regressions for pills and injectables
Relatively greater program stress on marketing	Regressions for pills, injectables, and condoms
Greater social-marketing effort or longer exposure to social marketing	Regressions for pills, injectables, and condoms
Distribution and promotion channels	
More pharmacies and other outlets	Egypt; Peru; Pakistan; comparisons of five cases
Better distribution network, particularly roads	Regression for pills[b]
Business strategies	
Focus on wide availability of cheaper products	Peru and Pakistan vs. the Philippines
Regulation and business climate	
Liberalization of pharmacy regulations	Peru; restrictions in Indonesia
Lighter overall regulatory burden	Regression for injectables[b]
Market size and potential	
More urban women of reproductive age	Regressions for pills and injectables
Greater urbanization	Regression for condoms
Greater public reliance on private care and pharmaceuticals	Pakistan
Female literacy	Regression for injectables
Low or high, but not medium, contraceptive prevalence	Regressions for injectables and condoms
Traditional method prevalence	Regressions for pills[b] and condoms

[a] Inconsistent effects are omitted, along with two regression effects that do not have clear explanations: the contradictory effects of out-of-pocket health costs on the private share for pills and the effect of IUD prevalence on the private share for condoms.

[b] Not confirmed in regressions where social marketing is controlled.

Policy Implications

Can commercial sources provide more contraceptive coverage? Some of the factors related to the private share are not amenable to policy change. This is certainly the case, for instance, for potential market size as measured by urban women of reproductive age. Other factors fall clearly within the scope of political decisions, such as lessening restrictions on licensing pharmacies and the products they may carry. Business strategies are under the control of individual companies, but may be influenced by government. Still other factors are within the control of national family planning programs, particularly the pricing of public products and services and media promotion of specific contraceptives.

Although the variation in private share evident across countries may not have resulted from deliberate actions by policymakers, this review suggests that policy decisions can play an important role in increasing the private commercial share in the future. How governments regulate and how programs price and promote their products have consequences for the commercial sector that they should take into account.

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Appendix A

Table A1: Effects of interactions with social-marketing effort on the commercial outlet share

Social-marketing variables	Pills			Condoms		
	B	t	p<	B	t	p<
Equation 1						
Duration	0.104	2.273	0.030	0.157	4.516	0.000
Effort	0.214	0.536	0.596	0.035	0.108	0.915
Effort x Out-of-pocket %	0.005	0.673	0.506	0.006	1.108	0.276
Effort x Out-of-pocket $	-0.002	-0.967	0.341	-0.002	-1.706	0.097
R2 (n)	0.59	(42)		0.77	(46)	
Equation 2						
Duration	0.103	2.208	0.035	0.192	5.877	0.000
Effort	0.266	0.969	0.341	-0.390	-2.014	0.052
Effort x Female illiteracy	0.002	0.323	0.749	0.013	3.429	0.002
R2 (n)	0.57	(42)		0.81	(46)	
Equation 3						
Duration	0.064	1.439	0.161	0.126	7.029	0.000
Effort	0.750	2.642	0.013	0.818	8.361	0.000
Effort x IUD prevalence	0.025	1.273	0.213	0.025	3.574	0.001
Effort x Trad. meth. prev.	-0.084	-2.831	0.009	-0.115	-11.013	0.000
R2 (n)	0.67	(41)		0.94	(44)	
Equation 4						
Duration	0.106	2.256	0.032	0.142	3.886	0.000
Effort	0.270	1.287	0.208	0.191	1.291	0.205
Effort x Regulation index	-0.151	-0.577	0.568	-0.342	-1.739	0.091
R2 (n)	0.59	(42)		0.75	(46)	

Note: Other variables in each equation, not shown, are the main effects for variables shown and the variables in Table 3.

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