



Department of Economics

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**The Population Problem and the Concept of ‘Unmet Need’ for
Family Planning
-
Should ‘Unmet Need’ Serve as a Guide to Policy Decisions?**

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Abstract

This paper has its starting point with the discrepancy between the ICPD Plan of Action and the Millennium Development Goals with regards to their separate emphasis on the importance of family planning services as a reproductive health component. The population problem can be looked upon from various theoretical schools. This paper examines the sharply contrasting views of economists, on the one hand, and demographers who support family planning on the other.

One central argument is put forward in the paper. Policies that focus solely on the elimination of an ‘unmet need’ for contraceptives are not likely to be successful. In fact, evidence suggests that ‘unmet need’ does not correspond to latent demand for contraceptives. Instead a broader assessment of the underlying components that cause women/couples to have many children is essential for understanding the reasons for high fertility rates. In addition, including a gender perspective in the analysis would further broaden the discussion.

Keywords: unmet need; family planning; fertility; poverty

Acronyms

AINC	Average Ideal Number of Children
CBR	Crude Birth Rate
CDR	Crude Death Rate
DHS	Demographic Health Surveys
DTFR	Desired Total Fertility Rate
CPR	Contraceptive Prevalence Rate
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
ICPD	International Conference on Population and Development (Cairo, 1994)
MDG	Millennium Development Goal
MMR	Maternal mortality Ratio
MSB	Marginal Social Benefit
MSC	Marginal Social Cost
ODA	Official Development Assistance
RH	Reproductive Health
STI	Sexually transmitted infection
TFR	Total Fertility Rate
UN	United Nations
UNDP	United Nations Development Program
UNPD	United Nations Population Division
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
WTFR	Wanted Total Fertility Rate

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Appendix

1. Introduction

“All countries should strive to make accessible through the primary health-care system, reproductive health to all individuals of appropriate ages as soon as possible and no later than the year 2015.”

ICPD paragraph 7:6

“All countries should, over the next several years, assess the extent of national unmet need for good-quality family-planning services and its integration in the reproductive health context, paying particular attention to the most vulnerable and underserved groups in the population.”

ICPD paragraph 7:16

In 1994 at the International Conference of Population and Development¹ (ICPD) in Cairo, a global consensus regarding population issues was reached. The ICPD program of action set out a broad range of priority issues, including among others, population and development, gender equality and equity, reproductive health and rights, and adolescents and youth (UNFPA 2004).

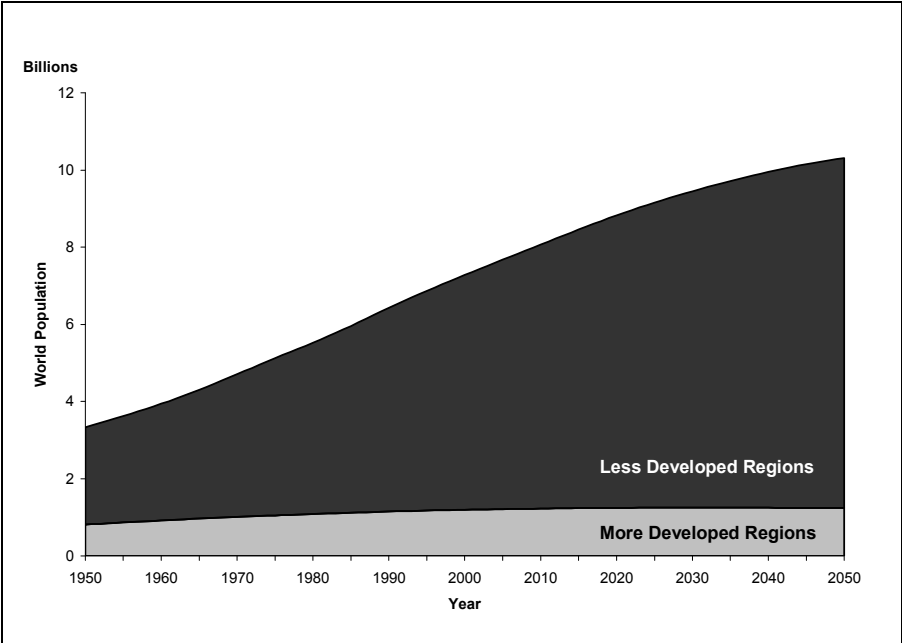
Population assistance from the international donor community has increased slowly but steadily since the ICPD. The 4 percent threshold of ODA to population activities was reached in 2003, when donors attained a total of 5.12 percent ODA. The increase in funds allocated to population issues can largely be attributed to the heightened focus on HIV/AIDS. The United States alone earmarked 11.45 percent of its ODA to population assistance², which makes it the leading donor country (UN Commission on Population and Development 2005). Table 4 below displays the trend of ODA allocated to population assistance. Major bilateral donors such as the United States and the UK are clearly the main contributors to the increasing trend. Small countries such as Sweden, Denmark and the Netherlands, who distribute most of their funds through multilateral channels, are following the positive trend but at a slower rate.

¹ The Conference was convened under the auspices of the United Nations and was organized by a secretariat composed of the Population Division of the UN Department for Economic and Social Information and Policy Analysis and UNFPA. It was the largest intergovernmental conference on population and development ever held, with 11,000 registered participants, from governments, UN specialized agencies and organizations, intergovernmental organizations, non-governmental organizations and the media. More than 180 states took part in negotiations to finalize a Programme of Action in the area of population and development for the next 20 years (UNFPA 2004).

² Population assistance is here defined in the following categories 1) family planning services, 2) basic reproductive health services 3) STI/HIV/AIDS activities, and 4) basic research and development policy analysis.

Although there are many similarities between the Millennium declaration and the ICPD program of action, the ICPD-goal of universal access to reproductive health has been problematically incorporated into the MDGs. Bernstein (2005) explains this relationship as being the result of a number of factors. Among them, were the “hot-button” issues of reproductive health such as abortion, gender relations and adolescents’ needs for information and services. Yet, the World summit in September earlier this year once again highlighted the ICPD-demand of reproductive health services by 2015 (World Summit Outcome, paragraph. 57:G).

FIGURE 1 Growth in World Population, 1950 – 2050



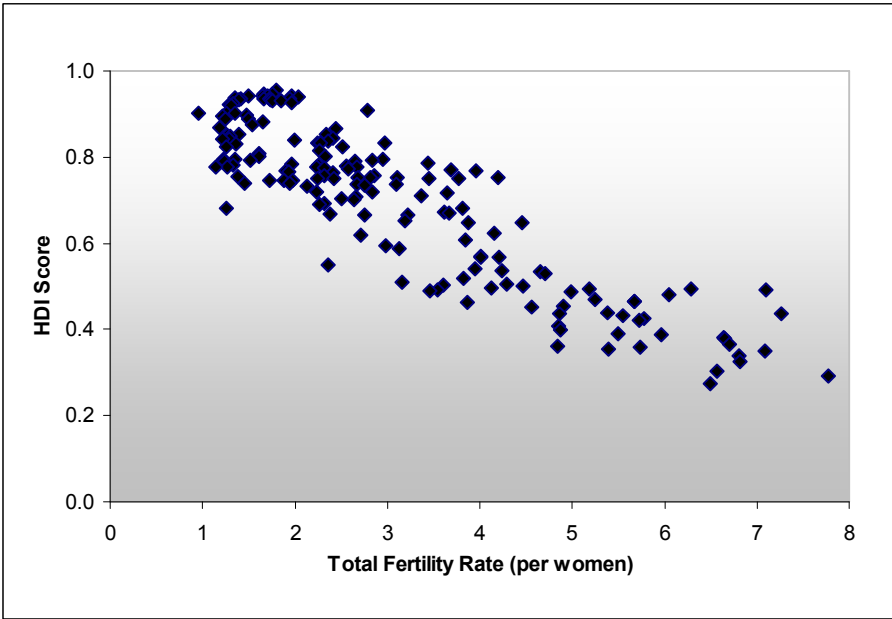
Source: UN Population Division 2004

When considering the eight different MDGs (see table 1) the health dimension can by no means be dismissed. The task group for Child Health and Maternal health of the UN Millennium Project concluded in one of their principle recommendations that “sexual and reproductive health are essential to meeting all the MDGs, including those on child health and maternal health” (UN Millennium Project 2005). Although many reproductive health oriented components have been put in into the MDG monitoring framework, access to family planning is still not represented at all. The only factor that comes even remotely close is the indicator of condom use as a portion of the contraceptive prevalence rate (CPR). However, in this regard condom use is an indicator of the relative progress that has been made in combating HIV/AIDS. All things considered, the fact that the MDGs do not identify sexual and

reproductive health as a specific target/indicator that includes access to contraceptives constitutes a severe blow to the family planning community.

During the past fifty years world population has been growing at an extraordinary rate. According to demographic projections carried out by the UN Population Division world population will have tripled by the year 2050 from 1950. The most important finding in figure 1 is that population growth is limited to the less developed regions of the world³. There is an undisputable understanding in the development community that household size correlates positively with the level of poverty; the larger the household – the poorer the household (Lipton and Ravallion, 1995; Kabeer 1996; Sachs, 2005). Hence, population issues are firmly rooted in the larger context of poverty alleviation. As Merrick (2001) points out, “Lipton noted in 1983, ‘almost every study, at whatever level of disaggregation, for either a particular group or for a total population, shows the incidence of poverty and mean household size increasing together.’”

FIGURE 2 Human Development Index Scores by TFR, 168 countries 2004



Source: DHS 2004 + Human Development Report 2004 (World Bank)

The real problem, then and now, is to demonstrate a causal relationship or to establish the direction of causality, since the correlates of poverty (illiteracy, poor health, etc) are also

³ The more developed regions comprise all regions of Europe plus Northern America, Australia/New Zealand and Japan. The less developed regions comprise all regions of Africa, Asia (excluding Japan), Latin America and the Caribbean plus Melanesia, Micronesia and Polynesia.

associated with high fertility. Figure 2 illustrates the clear relationship between fertility rates and economic development (A similar correlation would appear if HDI were replaced with \$1/day income).

As the policy emphasis is leaning increasingly more in the direction of country-driven poverty reduction strategies to reach the development goals, it is important to define what role population issues play in this larger context. Economists and demographers are very much at odds in terms of the conceptual understanding of how fertility reductions occur within a population. As a consequence, policy recommendations are divergent. If there is a discrepancy between actual and desired levels of fertility and this inconsistency can be explained by failures in obtaining quality contraceptives then it makes perfect sense to argue for a logistical solution to the problem. The mere supply of contraceptives is a fairly simple solution to the problem of lowering the fertility rates among the poor. If access to contraceptives/family planning services is considered to be a direct causal determinant of fertility rates and that there is an actual demand for contraceptives then policies ought to expand and put family planning programs at the center of development efforts. The question then follows, *is* there an unmet demand for quality contraceptives? As stated in paragraph 7:16 from the ICPD program of action all countries actually did agree to carry out an assessment of the national ‘unmet need’ for quality contraceptives.

The concept of ‘unmet need’ is central in this context in two ways. First, ‘unmet need’ for family planning has served as, in the words of Casterline and Sinding (2000), “...an organizing concept for population policies and for reproductive health and family planning programs”. Thus, for family planning advocates the reduction of ‘unmet need’ is a predominant goal in lowering fertility. Consequently, access to contraceptives is regarded as a direct determinant of fertility. Secondly, emphasizing ‘unmet need’ leads to a reduction of the relative importance of the impact of economic growth and social development in lowering fertility rates (Pritchett 1994). Statistics from DHS of recorded ‘unmet need’ in a number of high-fertility countries in sub-Saharan Africa show high levels with many countries coming in around 25%. If these numbers are correct then there are millions of women that are unable to carry out their fertility desires. Following the rationale of family planning advocates, meeting the need of all these women will have a substantial reducing effect on total fertility rates. However, when examining the DHS data more closely it is apparent that ‘unmet need’ does

not correspond at all to the linguistically weaker “demand”, which is the term preferred by economists.

When constructing economic models of fertility behavior, the complexity of the reproduction process must not be neglected. Kabeer (1996) argues that “...the complexity of human behavior in an activity so deeply personal and yet so profoundly social as reproduction defies all attempts to reduce it to a universal set of explanatory variables”. If the intricate micro relations are being simplified to such an extent that policy decisions are being conducted on the basis of crude statistical relations where manipulation of numbers are thought of as the solution to the problem, policies are unlikely to be successful. Economic models do, in their focus on the underlying cost/benefit analysis of the reproduction decision mechanisms, offer many important points as to why parents might not want to have another child. This demand side perspective is likely to give better insight to the complexity of the decision making process carried out by parents. A thorough analysis of the micro aspects of fertility behavior is an absolute necessity to address the population problem appropriately. Clearly, family planning advocates are finding solutions to the population problem on the supply side and economists are focusing on solutions on the demand side. The conflict is obvious.

1.1 Objective of Study

The objective of this thesis on population economics is twofold:

- To present a brief overview of “the population problem” and discuss reproductive health in the context of the ICPD Plan of Action and how it is being represented in the MDGs.
- To investigate whether ‘unmet need’ for family planning is a concept that should be used as a tool for policy design.

1.2 Research Approach

Chapter 2 discusses the historical trends in the scientific study of population economics starting with Malthus. It is important to have a fair understanding of how the subject has evolved throughout the years. Malthus’ influence cannot be understated as his theories continue to affect the academic discourse to this day.

Chapter 3 discusses demography as a scientific study and explains important components and variables and their relevance to the concept of ‘unmet need’.

Chapter 4 discusses the quantity/quality theory which has been dominating economic theory in various forms. The Barro&Becker model from 1988 is analyzed in greater detail.

Chapter 5 discusses the relationship between actual fertility and desired fertility.

Chapter 6 discusses the concept of an unmet need for family planning and how suitable it is as a guide for policy.

Chapter 7 discusses the importance of a solid understanding of the micro dynamics in the fertility decision when designing policies.

1.3 Delimitations

Obviously many aspects of the “population problem” are being left out of this paper, these include but are not limited to: i) the link between population and environmental degradation, ii) the political aspect of family planning; the fact that it is a very hot political topic, especially in the United States, and how this might affect donors and the policy climate, iii) the role of the private sector when a developing country is getting more self-sufficient in terms of contraceptive supply (a subject which I also think is highly suitable for more research).

2. A Brief History of Population Economics

Population economics is virtually as old as the science of economics itself and a brief look into the historical rearview mirror shows that some of the earliest theories still prove to be influential today. There are many existing studies as to how population economics have been evolving through the years; therefore there is no point in extending that discussion in this paper. However, it does make sense to point out the main trends in the academic discourse in order to obtain a sense of how the policy climate of today has come about. Bloom *et al* (2003) recognizes three main schools of theory on how academics have looked upon population growth and its effect on economic development. For clarity these three schools of thought are each attributed a name; 1) the pessimistic theory (in the sense that population growth is hampering economic growth) 2) the optimistic theory and 3) the neutralist theory. It would be very easy to continue dividing the research into even narrower subgroups, but for our purposes, this classification shows that scientists have found evidence in all possible directions – population growth can be either harmful to economic growth; stimulating to economic growth, or neutral to economic growth.

Thomas Malthus is considered to be an intellectual forefather of population economics. Yet, though many of his theories have been rejected today his influence is indisputable and withstanding. Malthus anticipated terrible disasters resulting from population growth and his research can easily be labeled as pessimistic or “alarmist”. With highly questionable scientific back-up Malthus concluded that population, when unchecked, would increase in a geometrical ratio, whereas food production only increases in an arithmetical ratio⁴. The obvious consequence is that population eventually will exceed food production. Malthus (1798) bleakly summarized “In two centuries and a quarter, the population would be to the means of subsistence as 512 to 10; in three centuries as 4096 to 13; and in two thousand years the difference would be almost incalculable, though the produce in that time would have increased to an immense extent”. Fortunately, Malthus was badly mistaken in his doomsday scenario. Sen (1999) refutes Malthus by arguing that food production per head, except for the case of Africa, has indeed not been declining. To the contrary, areas in the third world that are densely overpopulated have seen the largest increase in production of food.

⁴ Geometrical ratio (population growth) – 1, 2, 4, 8, 16, 32, 64, 128, 256, 512 ...
Arithmetical ratio (food production) – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 ...

Malthus' pessimism has remained in the debate in various forms. In 1968 Paul Ehrlich published a highly influential book "The Population Bomb" where he argues that by the end of the 1970s hundreds of millions of people will have starved to death. Kabeer (1996) opposes the alarmist rhetoric: "The tendency of neo-Malthusian sections of the population establishment, backed up by doomsday scenarios of the effects of rapid population growth, has been to conceptualize the question of population purely in terms of the efficient management and control of numbers, a tendency which may explain the frequent use of militaristic metaphors in the formulation of demographic policies: contraceptive saturation; targeting of clients; vasectomy camps; and population bombs."

While Malthus was wrong in the sense that per capita income did in fact increase in the face of geometrical population growth, other theories emerged that literally turned Malthus' world around. Simon Kuznets emphasized the potential of a larger population to increase and develop its knowledge stock as a result of economics of scale (Kuznets 1967). The pressure of increasingly larger populations is believed to yield more inventions and better technology, thereby boosting economic growth⁵. Ester Boserup (1965) follows this line of research and suggests a reversed causal relationship between population and agriculture. In direct opposition to the neo-Malthusian agenda Boserup writes "...population growth is here regarded as the independent variable which in its turn is a major factor determining agricultural developments".

Neo-classical growth models such as the Solow-model from 1956 represent a clear break with population theories in the Malthusian tradition. in which fixed land did not impose an overwhelming restraint on production (Ehrlich *et al* 1997). Demographic variables got increasingly less attention in economic analysis simply due to the fact that the existing modeling framework failed in establishing a relationship between growth rates of population and per capita income.

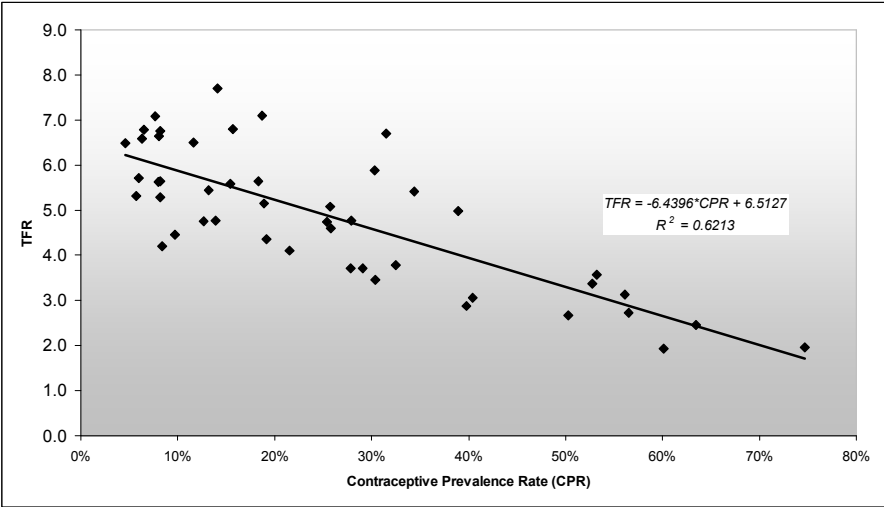
⁵ The famous American population economist Julian Simon wrote a highly influential book in the "optimistic" line of research. His book "The Ultimate Resource" in 1981 stated that rapid population growth in Third World countries will have a positive impact on economic growth in the intermediate run.

3. Demographic Analysis – Concepts and Issues

3.1 A Problem of Causality

The academic discourse regarding the determinants of fertility is, by and large, split in half between two dominating views – those held by economists and those held by demographers supporting family planning as an important determinant of fertility. The main disagreement concerns the role of family planning services and whether access to contraceptives in itself constitutes a proximate determinant of fertility. In terms of policy; does the provision or subsidization of contraceptive services offer the possibility to substantially reduce fertility rates, independent of broader development trends?

FIGURE 3 TFR by CPR in sub-Saharan Countries



Source: Demographic Health Surveys (2005); www.measuredhs.com.

The sometimes heated debate is largely one of causal character. Comparative data typically shows that larger households are poorer (Lipton, Ravallion 1995, Kabeer 1996, Sachs 2005), which is a relationship that also holds on the national level. This correlation; high fertility combined with extreme poverty, has implied causation for many demographers (Anand, Murduch 1996). Figure 3 illustrates the core disagreement between the two parties by plotting total fertility rate (TFR) against contraceptive prevalence rate (CPR) for 29 countries in sub-Saharan Africa.

Hence, it is easy to conclude that the access to contraception will determine the fertility level. Family planning advocates are using the concept of ‘unmet need’ as an advocacy tool to promote the idea that increased funding from donors will reduce fertility and thereby also reduce poverty by satisfying the fertility desires of women/couples. According to this rationale there is a discrepancy between desired fertility rates and actual fertility rates that is largely explained by the existence of the ‘unmet need’ for family planning services. ‘Unmet need’ is then given a prominent role in the bigger issue of poverty alleviation.

3.2 Population Dynamics and Economic Growth – Lack of Correlation?

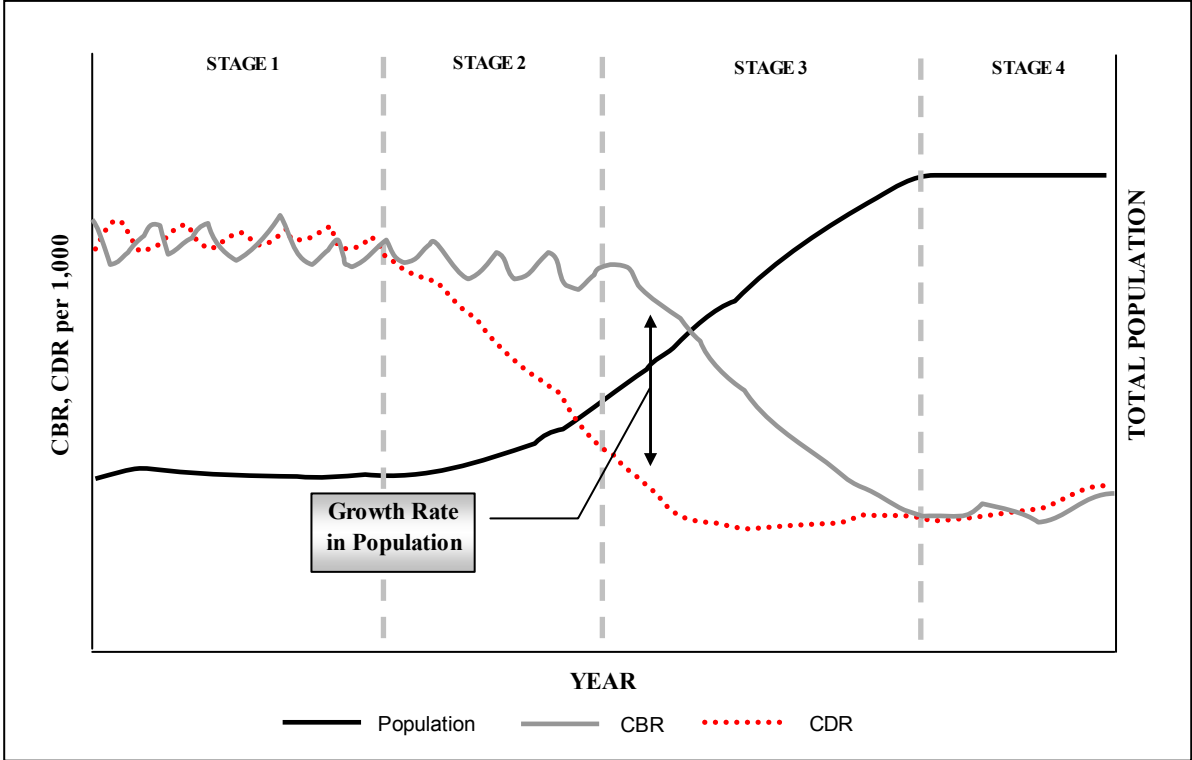
Demography is defined as the social science that is directly concerned with issues regarding human populations. At the core of the demographic study are variables such as childbearing and birthrates, dying and death rates, and migration rates - the three fundamental processes that alter and produce populations (Daugherty *et al* 1996). Neoclassical growth models solved one of the most important problems with the Malthusian theory; the significance of fixed land in constraining the production process. However, these models treat population growth as an exogenous variable and ignore the micro fundamentals of population growth. Most economic analysis that has examined the statistical correlation between population and economic growth has found little significant correlation. Still, countries with rapid population growth tend to have more slowly growing economies. When other variables such as country size, openness to trade, education variables, and societal institutions are taken into account this slightly negative correlation typically disappears or even changes direction entirely (Bloom *et al* 2003). However, demographic research claims that there is a strong relationship between growth in population and economic performance. The lack of correlation was a natural result of economists not asking the right questions. Following this pattern of thought, increased emphasis was put on the age-composition of the population instead of the growth rate.

The study of fertility remains one of the most important fields within the demographic discourse. This is due to the fact that understanding the timing, causes and nature of fertility decline could explain the phenomenon known as the demographic transition.

3.2.1 The Demographic transition: Declining mortality and fertility

The demographic transition is essentially a period of time when a population is going from pre-industrial high fertility and mortality to post-industrial low fertility and mortality (Williamson 2001). There are many components that have contributed to the general mortality decline in the world and certainly the overall improvement in recent decades in medicine and public health in most countries has made a big difference.

FIGURE 4 The Demographic Transition Model



Source: Williamson 2001. (Authors own design).

According to many demographers, reducing the ‘unmet need’ for family planning is central in for family planning programs in facilitating the transition from high fertility to low fertility (Bongaarts 2005). Socioeconomic development is generally acknowledged as the main factor in lowering fertility rates, but access to family planning is seen a crucial aspect of the transition. Bongaarts (2005) comments on the stalling fertility rates in a couple of countries “Any policy response to address stalling fertility should be tailored to the circumstances of the individual country and in particular its levels of wanted and unwanted childbearing. Levels of unwanted fertility or unmet need for contraception are crucial indicators of the need to provide additional family planning services.

Schematically, the transition is characterized by sharp falls in (infant) mortality followed by falls in fertility (note that the drop in fertility is lagged and come first at a later date). These changes result, broadly speaking, in three consequences:

- ❑ An initial increase and subsequent fall in the rate of growth of population.
- ❑ An initial increase in the ratio of children to working age adults followed subsequently by a decrease.
- ❑ A significant increase in the share of older adults to working age adults during the last stage of the demographic transition.

At the end of transition, as in the beginning, population growth is at equilibrium at zero. The decline in mortality and fertility jointly constitute the demographic transition. A crucial aspect, and probably the one aspect with the clearest policy implications, is the fact that they are not synchronized. The lag induces population growth in the beginning of the transition. This phenomenon has been very much at the center of the views on population change and economic growth. Furthermore, the altered dependency ratios that comes as a result during the transition has given rise to a theory among demographers; the idea of a demographic dividend – a demographic gift – that could be taken advantage of if the right policies are set in place.

3.2.2 Population Dynamics: The Demographic Dividend

The dividend is essentially a matter of changing dependency ratios within the population. At first, when a country enters the transition and is experiencing falling mortality rates for all age groups, fertility rates are above replacement level. This induces population growth, and more importantly, it skews the age distribution towards a younger population. The result is a “baby-boom generation”. As fertility rates drop later in the transition population growth is back at zero. The effect of fertility decline in the later stage of the transition is a one-time "demographic bonus" or "window of opportunity"; a period during which the ratio of the working age population to the dependent population is unusually high. After a country has

passed through this period it returns to a stable dependency ratio at new lower levels of both fertility and mortality. Demographic research claims that population dynamics can explain significant parts of the extraordinary economic growth that has taken place in many countries. Williamson (2001) finds that about 1/3 of the economic miracle of East Asia can be explained in terms of population dynamics. Reducing ‘unmet need’ is, as noted above, an integral part of the transition. Capturing the demographic dividend thus hinges partly on whether ‘unmet need’ is tackled or not.

3.3 Demography in sub-Saharan Africa

While most developing countries are in the midst of undergoing a demographic transition countries in sub-Saharan Africa are lagging behind. This region has yet to experience the typical demographic transition (Bloom *et al* 2003). Compared to the rest of the world the one aspect of sub-Saharan Africa’s demographic situation that stands out is not the high fertility rates, per se, because all countries experience high fertility rates in the beginning of the demographic transition. What makes sub-Saharan Africa unique is the high sustained fertility rates in face of reduced mortality rates (Bloom, Sachs 1998). Rather than a baby-boom generation, the demographic situation as it is today has created an exceptional population explosion. Unlike other regions in the world dependency ratios in sub-Saharan Africa have risen. The working-age group (15–64 year-olds) adds up to about 53 percent while the same group in other parts of the world makes up 60 to 70 percent of the total.

If the population problem is present anywhere in the world, it is in sub-Saharan Africa. Traditionally strategies focusing on the availability of family planning have been used extensively in many African countries. Notwithstanding, sub-Saharan Africa is experiencing the largest ‘unmet need’ figures in the world⁶. Traditional economic theory has addressed fertility choice through a cost-benefit calculus based on quantity/quality tradeoffs where a lack of alternative investment opportunities mean that having children becomes like a kind of insurance or support in old age. The term ‘high-quality’ refers to children with more investments in human capital that have greater future earning potential.

⁶ Table 5 below displays demographic indicators for Sub-Saharan Africa

4. The Quantity/Quality Trade-Off

Economic approaches to model fertility outcomes are based on the choice theoretic idea of individuals who make economic decisions in order to maximize utility. These set of models distinguish themselves from non-economic models where levels of fertility are explained by, for example, cultural or biological factors (Arroyo III 1993). As seen below, it becomes evident that the quantity/quality models do not recognize ‘unmet need’ as a direct causal determinant of fertility levels. The sole focus on choice and the incentives underlying it offers interesting possibilities to getting closer to an understanding of the causal relationship between fertility levels and poverty. In a historic context Q/Q models can be traced back to the theories stipulated by Malthus. Malthusian analysis linked fertility to the economy through population and hence also the supply of labor. The neo-classicists maintained the idea that growth in population affects the capital/labor ratio and the degree of capital deepening. The Q/Q models incorporate both of these features while they also relate fertility to the economy through the human capital of the labor force. This connection is of great importance since it is a well known fact that the accumulation of knowledge in the workforce is of utter importance for economic development (Becker 1992).

The “quality” of children broadly refers to the amount of resources that parents choose to invest in each child. The rationale behind the Q/Q-trade-off, as explained by Becker (1992), can be understood as “an increase in the quality is more expensive if there are more children because the increase has to apply to more units; similarly, an increase in quantity is more expensive if children are of higher quality, because higher quality children cost more”. Consequently, parents face the choice constrained by whatever resources that they have available in either investing in many children with less resources put into each child or investing in less children with higher resource investment in each child. Reductions in fertility, according to this theory, are anticipated as a result of changes in return of investments in children’s human capital. In the course of economic development there is good reason to believe that this is exactly what will happen. Human capital will become increasingly more important as development brings about the upgrading of skill requirements, specialization and increased division of labor.

For policy concern, this approach will ultimately head in a different direction than supply-side oriented demographers. Since economists analyze fertility behavior on a decision basis the main concern for policy is to alter the mechanisms – on the micro level – that affect the perceived costs that couples take into account when making fertility decisions. Still, the economic approach, although it holds many appealing qualities, lacks power in a few regards one being the issue of viewing the household as one solid unit. The bargaining power of the members of the household might well differ, and if so, the welfare of the household as a unit is then skewed in favor of certain members of the household.

4.1 Becker&Barro (1988)

Becker and Barro (1988) is a dynastic model that incorporates most of the features of a Q/Q-model. The model is interesting because it uses altruism as a way to link utility considerations between generations into the fertility calculus. The utility of the parents depends on the degree of altruism they have towards their children; thus, parents' utility depends positively on the utility of their children. Dynastic utility is the discounted sum of the utilities of each generation of descendents, where the discount rate in each generation depends on the altruism and fertility of the ancestors. The economy in this model consists of identical individual households and the model is a life-cycle generational model with two periods: childhood and adulthood.

Arroyo (1993) summarizes the distinct features of the model as follows:

- 1) Individuals are altruistic about their children's consumption. This altruism is reflected in the rate at which future consumption is discounted.
- 2) Assumes perfect fertility control so that realized fertility is unilaterally determined by the generational demand for children. The model abstracts from contraceptive practices, biological factors, and other supply-side determinants of family size in a generation.
- 3) All births are modeled to take place at the same time (the beginning of the adult stage of life).

- 4) No uncertainty in the model. Individuals live exactly for two periods; no uncertainty about the occurrence of a birth or death, no shocks to preferences, or unobservable heterogeneity in individual fecundity.
- 5) Wealth and capital accumulation are integrated into the model, but intertemporal wealth are really just a matter of donations to the children. Thus, the utility gained from adding to children's wealth is what is equated at the margin to the value of parent's sacrifice of current consumption.
- 6) Competitive production sector characterized by constant returns to scale and exogenous labor-augmenting technological progress.
- 7) No labor-leisure tradeoff in the model. The tradeoff is between time devoted to child-raising and time devoted to market labor.
- 8) The model is a closed-economy model with no migration of labor or capital, and no trade or specialization in production.

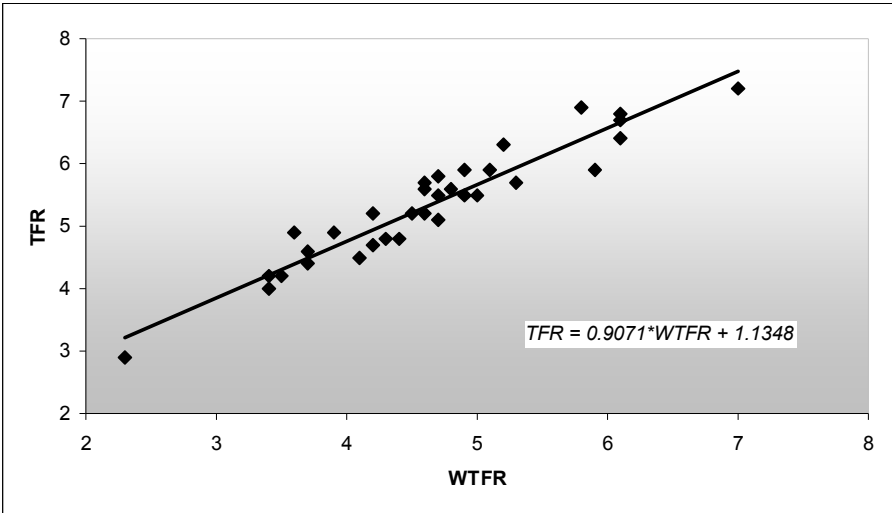
In the model, the only way to raise consumption over time is by increasing the costs of producing another descendent, or in other words, the only way to reduce poverty is to make the quantity/quality trade-off. Another important feature of the model is that it emphasizes the long-term aspect of the fertility decision. The cost of contraception is very much a short-term cost and might not correspond to the wider calculus about fertility.

Female education, schooling for girls and lowered child mortality are key factors that affect the demand for having children (UNFPA 2004). When a country goes through the different stages of the demographic transition the demand for children typically goes down due to these factors as the standard of living gradually improves. Naturally, reduced demand for children translates into lowered desired fertility rates, and hence also lowers actual fertility rates. As previously mentioned sub-Saharan Africa has not yet experienced the typical demographic transition. While mortality rates have dropped, fertility rates have remained the highest in the world. Correspondingly, the desired fertility rates have also remained high.

5. Actual Fertility and Desired Fertility

Statistics on fertility generally come from surveys such as DHS and World Fertility Survey (WFS) who have been collecting an impressive amount of information from different countries in different regions around the world. Today, there is more than one existing indicator in fertility preferences. In order to get a grasp of the relative importance of access to quality contraceptives it is of utter importance to have an idea of the relationship between actual fertility rates and desired fertility rates. There are a couple of existing measures of desired fertility. Pritchett (1994) focuses on three different measures; i) Average Ideal Number of Children⁷ (AINC), ii) Desired Total Fertility Rate⁸ (DTFR), iii) Wanted Total Fertility Rate⁹ (WTFR). Using a simple regression of the TFR on these three measures of fertility Pritchett (1994) finds that DTFR and WTFR are closely related and also explain a large fraction of actual fertility. AINC explains a substantially smaller fraction of actual fertility. The fraction of actual fertility explained by desires is 0.92 for DTFR, 0.89 for WTFR and 0.65 for AINC according to Pritchett’s study.

FIGURE 5 Total Fertility Rate by *Wanted* Total Fertility Rate



Source: Demographic Health Surveys (2005); www.measuredhs.com.

⁷ Average Ideal Number of Children (AINC) is an indicator of fertility preferences that draws on a question regarding their ideal number of children.
⁸ Desired Total Fertility Rate (DTFR) subtracts births exceeding desired number from actual number (in some variations deletes 'unwanted' births)
⁹ Wanted Total Fertility Rate (WTFR) is calculated by using the answers from questions regarding women’s future desires.

However, these three indicators are far from flawless. Critics of the desired fertility view argue often that the measure suffers from ex-post rationality. However, as WTFR is based solely on future desires the problem of ex-post rationality is solved. As DTFR and WTFR are relatively close to each other (0.92 and 0.89) it is reasonable to assume that ex-post rationality plays a minor role, if any at all.

When collecting information on TFR and WTFR from the latest DHS surveys the regression confirms Pritchett's analysis. Indeed, the fraction of TFR explained by WTFR is 90.5. Figure 4 portrays this relation for 32 sub-Saharan Countries. While Pritchett based his calculations on surveys from the 80's, this regression serves as an update since most surveys are from 1995 and onward.

The high numbers of desired fertility suggests that couples are roughly able to achieve their fertility targets. This then begs the question, is there an 'unmet need' for family planning services in developing countries?

6. Is There an Unmet Need For Family Planning Services?

“As part of the effort to meet unmet needs, all countries should seek to identify and remove all the major remaining barriers to the utilization of family planning services. Some of those barriers are related to the inadequacy, poor quality and cost of existing family-planning services. It should be the goal of the public, private and non-governmental family-planning organizations to remove all programme-related barriers to use of family-planning use by the year 2005 through the redesign or expansion of information and services and other ways to increase the ability of couples and individuals to make free and informed about the number, spacing and timing of births and protect themselves from sexually transmitted diseases.”

ICPD paragraph 7:19

Paragraph 7.19 from the ICPD declaration puts a heavy emphasis on the importance of meeting all the ‘unmet need’ for family planning services. Bearing in mind that 180 states ratified the ICPD Plan of Action in 1994, the elimination of a direct RH indicator for family planning in the MDG framework might seem odd today. The United Nations Population Fund concluded in a report¹⁰ from 2003 that some 200 million women in the developing world have an ‘unmet need’ for effective contraceptive commodities¹¹. Unmet need has been the topic of considerable debate, and much of the disagreement can be traced back to the difficulties in coming up with a universally accepted definition of the concept.

Unmet need is the measure of the discrepancy between the number of women in surveys who respond that they would like to limit or space childbirth but are not currently using contraception, as well as women who gave birth in the previous 18 months whose birth was recorded as “unwanted”. According to the standard definition used by DHS, the unmet need group includes all fecund women who are married or living in union, and thus presumed to be sexually active, who either do not want any more children or wish to postpone the birth of their next child for at least two more years but are not using any method of contraception. Similarly, women who have recently given birth and are not yet at risk of becoming pregnant because they are amenorrheic have an unmet need if the pregnancy was unintended. If adopting this definition, women that became pregnant due to contraceptive method failure are not recorded as having an unmet need. The 200 million-figure that UNFPA came up with in

¹⁰ The report “Adding it up – the benefits of investing in Sexual and Reproductive Health Care, UNFPA 2003”

¹¹ Contraceptive commodities include oral contraceptive pills, intrauterine contraceptive devices, injectables, condoms, vaginal foaming tablets, implants and supplies for female and male sterilization

2002 also includes women that are using traditional methods of contraception¹². Subtracting those women, roughly 30 percent of the total reduces the number of women to about 137 million. Advocates for family planning consider unmet need to be a measure of the number of women that are unable to carry out their reproductive rights. Hence, taking the causal relationship between CPR and TFR as discussed in chapter 3, unmet need for family planning constitutes the link between high fertility/poverty and development. In this regard, the ‘population problem’ is simplified to the existence of this unmet need; a statistical relation stemming from the answer to a question in a survey. If contraceptive access is considered to be an independent causal determinant of fertility, the elimination of unmet need will have a direct effect on reducing fertility rates (Bongaarts 2005). Thus, when considering population policy options it is believed that unwanted pregnancies will decrease by expanding family planning and reproductive health services. As Bongaarts (2005) puts it, “Unwanted pregnancies occur when women and men who want to avoid pregnancies do not practice effective fertility regulation”. This is certainly true to a degree, but it does not explain *why* births are unwanted. Chapter 5 reaffirmed the point made in Pritchett (1994) regarding the relationship between desired fertility rates and actual fertility rates. The fact that a large fraction of actual fertility rates tend to be explained by desired fertility puts an upper boundary on the influence of reducing unmet need. If WFR explain as much as some 90 percent of TFR, ‘unmet need’ has to account for a significant part of the remaining 10 percent if it is to be the main focus for policy. Consequently, this would also reduce the relative importance of other possible factors that might influence actual fertility rates, such as difference in preferences between the sexes.

The ‘Task force on Health and Maternal Health’ of the Millennium Project recommended that ‘proportion of demand for family planning satisfied’ should serve as an indicator for monitoring the MDGs (UN Millennium Project 2005). The total demand for family planning, in this regard, is calculated by adding ‘unmet need’ to CPR. The proportion of demand satisfied is then CPR divided by total demand¹³. It is clear that ‘unmet need’ for family planning is a major focus in the debate today.

¹² Traditional methods principally include periodic abstinence and withdrawal; which do not require specialized advice or supplies, but which have relatively high failure rates.

¹³ Prop. of demand satisfied = $CPR / (CPR + \text{unmet need})$

6.1 Statistics do show high levels of ‘unmet need’

Consider table 6 below where recorded unmet need figures from the two latest DHS surveys in a number of sub-Saharan countries are being displayed. Survey dates tend to vary between countries, but the older survey is usually from the early 1990s while the more recent survey was carried out in the late 1990s/early 2000s. Undeniably, the diagram shows high levels of unmet need throughout the spectrum of sub-Saharan countries. In some countries numbers are as high as 35%; that is, one out of three women is having a need for family planning services that is not being met. However, as compelling as the figures might seem, they should be taken with severe caution. Despite the rhetorically powerful “need”, unmet need does not necessarily reflect latent demand for contraception. This might seem odd, since need, in a hierarchy of desires, usually ranks higher than a “want” or “demand” (Pritchett 1994). This is a first hint of the problems with ‘unmet need’. The relationship between ‘unmet need’ and “demand” (the term typically preferred by economists) is ambiguous and needs to be investigated in greater detail.

If women are, in fact having a need for contraceptives that is unmet, this unmistakably means that they want to consume and therefore that they have not made a choice *not* to consume.

6.2 A choice Not to Consume?

To make things more clear, disregard the linguistic confusion between “need” and “demand”. Instead, let us focus on whether women choose not to use contraceptives or if they simply do not have a choice. If we assume that women, on the whole, are choosing not to consume then two main objections can be raised to this assumption. The first of these objections is that women do not consume simply because they do not have enough knowledge of family planning in general and specific methods of contraception in particular. Looking at table 7 below, the figures suggest that of an average across the different countries, close to 85 percent actually do know of and have access to information about contraceptives. If we make a comparison to any other consumer good, it is hard to believe that consumers in general have perfect information about all of the different products in the market. It seems to be a bit far fetched to assume that some women’s lack of knowledge about contraceptives should be taken as the reason for not consuming.

The second objection is to the assumption that women do not consume because they can not afford contraception. Naturally, if this objection were true then the whole issue of choice would not even be relevant. Consider table 9 of all the sub-Saharan countries listed, it is striking how few women that cite price and access as a reason for their non use. Together, price and access does not add up to much more than one percent in any of the countries listed. Bearing in mind that we are studying some of the poorest countries in the world, where households are living under \$1 per day this might come as a surprise. Yet, as Pritchett (1994) points out, even where families are living under \$1 per day, contraception would only amount to about 1% of household income, which is roughly equivalent to the fraction of income devoted by poor households to purchases of tobacco.

6.3 The Perceived Costs of Contraception

Use of contraception is not free. The costs of couple year protection (CYP) vary between methods, from \$0.16 for an IUD to \$4.20 for Condoms (see table 2 below). If the existence of ‘unmet need’ is not a result of problems of overcoming the monetary costs of contraception, what is? There is strong belief among advocates for family planning that people decide about fertility regulation on the basis of perceived rather than actual costs and benefits. Bhusan (1997) identifies three separate components of the perceived costs of contraception: 1) Economic costs, 2) Physiological and Psychological Costs and 3) Social, Familial, and Personal Costs. Costs that fall under the physiological and psychological category include discomfort, fear of permanent health problems, anxiety over contraceptive failure and also perceived irreversibility of method, among other things. The third category of costs includes a variety factors that are attributed to a certain type of costs (typically ‘husband opposing contraceptive use’). This categorization is common among family planning advocates. Henceforth I will refer to category two and three as “non-economic costs”.

These non-economic costs impose a serious problem of measurement. Quantifying or even measuring something as obscure as “anxiety over contraceptive failure” is without much doubt bordering on the impossible. An empirical analysis is therefore seemingly hard to carry out. Still, looking at table 9 non-economic factors represent an overwhelming percentage of reasons why women do not use contraceptives.

The crucial question for our analysis is to determine whether these non-economic costs enter the budget restriction in some way or if they determine the shape of the preferences. Without doubt, the non-economic factors are important but that does not necessarily mean that they qualify as costs that change the budget restriction. In table 9 we see that the main reasons for non-use are often related to the fear of side effects or family member opposing. The fear of side effects might well outweigh the utility of using contraceptives, but contraceptives do not become a ‘bad’ rather than a ‘good’ because of that. Consequently, it has nothing to do with the slope of the budget constraint. Similarly, it doesn’t get more expensive to jump out of an airplane just because you prefer jumping without a parachute – it just might hurt more. All in all, the non-economic “costs” in fact do alter the shape of the utility function of the trade-off between spending money on contraceptives or something else.

6.4 The Elasticity of Demand for Contraceptives

According to the statistics from DHS the price of contraceptives or access do not constitute a major barrier to contraceptive use. However, it is important to note that the DHS surveys do not measure elasticity directly; they merely ask about the reasons for not using contraception or for discontinuation. The evidence on the price elasticity of demand of contraceptives to this day is difficult to interpret. The difficulties in measuring elasticity in this context arise from a couple of different aspects of the nature of contraceptives and the markets for them (or lack thereof). However, it is clear that the demand is inelastic. The tricky question then is to determine exactly how inelastic it really is?

Matheny (2004) summarizes the findings in the two dozen published studies carried out in the past two decades that aims to measure price elasticity of demand for contraceptives. Two types of different elasticity measures are distinguished: “own-price elasticity” (the percentage change in sales or number of respondents using one particular brand or method) or “overall-price elasticity (the percentage change in sales, or number of respondents using any brand or method). Due to brand and method substitution the quality of estimates of “own-price elasticity” is highly questionable. It is simply not accurate to assume that a user stops practicing contraception when ending the use of one particular brand or method. The net effect of changes in the price of contraceptives has to account for substitution between

methods. The availability of different methods is thus likely to affect elasticity. If a greater variety of methods are present in the market, substitution possibilities will make consumers relatively less dependent on a specific method of contraception. Matheny (2004) found that in five studies that measured overall elasticity, the elasticity ranged from 0 to 0.15. Pritchett (1994) refers to a study carried out by Molyneux and Diman in 1991 that recorded a price elasticity of demand 0.03, i.e. a doubling of contraceptive prices would only result in a 3% decrease in demand. According to Hanson (2001) the evidence on elasticity put forward in Lewis (1985), still hold relatively well today. Lewis (1986) concluded that increased price levels have little change on demand. Furthermore, small price increases can also stimulate demand because of the perception among consumers that a higher cost is a reflection of the value and quality of a product. All in all, due to the various measurement problems we do not know much more about the price elasticity of demand today than what we did 20 years ago. Hanson (2001) also stresses that the interpretation of elasticity measures requires a thorough understanding of the context in which the price change took place. However, a highly inelastic demand-curve is consistent with the evidence from the DHS surveys that cites price and access as a minor factor of non-use of contraception.

The fact that demand to a high degree seems to be is inelastic with respect to price changes has important consequences for our analysis. Large increases in CPR might well be the result of a shift in the demand for contraception (and thus a movement *along* the supply curve) that is caused by changed demand for children. The correlation between TFR and CPR as displayed in Figure 3 above is caused by shifts in the demand curve for contraceptives and not in the supply curve. Shifts in the supply curve are likely to have very little effect on the total quantity of contraceptives consumed since demand is inelastic. Pritchett (1994) argues that “...all cross-country or household calculations showing strong statistical relationship between contraceptive use and lower fertility that do not adequately control for shifting demand are simply not to the point in assessing the implications of a shift in the supply of contraceptives.”

The demand for contraception is derived from the demand for children or the desires to limit childbearing. The Barro&Becker model from (1988) emphasized the long-run aspects and the costs associated with the decision about fertility. With this in mind, the relatively small and short-run oriented costs of contraception simply cannot be the major factor when households make decisions about fertility. Rather, as Pritchett (1994) points out, the supply of contraceptives is only of minor importance in the wider calculus of fertility.

7. Microeconomic Theory and Public Policy Design

Economic analysis should be conducted with a direct aim to improving public policy and in this particular case, policies related to population issues. As demonstrated, macroeconomic evidence regarding fertility is controversial and unsound. The macroeconomic tools at hand cannot capture the dynamics of the micro level mechanisms where fertility decisions are actually carried out. Any policy that is based on evidence that disregards the micro fundamentals might well contribute to even greater efficiency losses than what would have been the case with no policy in place. In short; no policy is better than bad policy. At the very core of economic theory is the idea of the utility maximizing individual. The standard assumption of individual decision-making is that all individuals are making decisions such that they maximize their perceived welfare over time discounted to the present. The decision is taking into account a number of factors: the prices that they are currently facing and expect to face in the future, informal networks they have and expect to have in the future, policies now and in the future, knowledge of markets, social norms, production processes, and other relevant information (Behrman 2001).

This assumption, made by economists, is not an assumption free from criticism and raises a number of different questions. For instance, it is common to think that people in developing countries do not have any opportunities to improve their lives and escape poverty. People in rich countries have a variety of ways to increase their own personal welfare. In the poorer parts of the world, however, the options are limited. Still, and central to my analysis; poor people do make decisions and thus have choices which inevitably will affect their behavior.

Individuals face constraints when maximizing their welfare. For poor people these constraints are severe; both in the case of physical resources and human resources. The ability to control resources and choose between different choices options is governing investment behavior among individuals. Whether a certain resource will pay off, such as human capital, is determined by the “price” of the particular resource. If the rates of return of education are expected to go up with development, it might well be a good idea for parents to invest more heavily in fewer children. There are existing evidence on the quantity/quality theory that suggests that higher levels of female education is likely to have a reducing effect on desired family size. Education raises the opportunity costs of women’s time.

Lack of knowledge imposes a severe constraint to the individual's ability to maximize welfare. In the case of family planning limited knowledge of the many methods of contraception might affect the fertility behavior of couples. It is plausible to think that greater accessibility of information might reduce fertility in high-fertility countries due to the fact that women and men increase their options of planning fertility.

7.1 Who is Making the Decisions?

It is natural to think that fertility decisions are made by both of the parents. If that is the case, fertility decisions represent a form of collective decision-making. If the entity known as the household is making fertility decisions collectively, the divergence of the family members separate interests might result in a decision more in favor of one of the parties. If the preferences of the individuals within the household are not weighted equally when decisions are being made, it is likely that the weaker individuals receive a limited share of the resources available. Economic models have typically treated the household a homogenous unit where welfare of all household members is being maximized. However, research has shown that interests as well as bargaining power tend to differ within the household. The unitary model of the household has been rejected in numerous country settings in both developed and developing countries (Quisumbing, et al 2000). This is likely to have tremendous policy impacts. If households are targeted in a family planning program with the object to reduce fertility, and men and women have diverging interests, the success of the policy is hinging on whether men or women are controlling the means of the household. The gender aspect of fertility is very important, and could possibly explain why actual fertility is different from desired fertility.

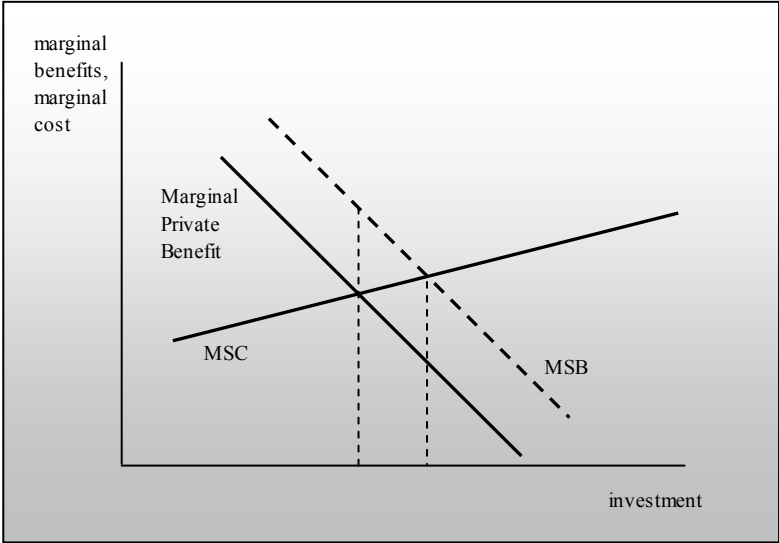
7.2 Justification for Governmental Policy Intervention

Policies are, in general, justified if they (i) improve the way resources are used and thus increase efficiency or (ii) are used in a way as to redistribute resources in society.

The microeconomic definition of efficiency is rooted in the well-being of the individual, more specifically on people's own perceptions of their own welfare. When individuals are maximizing their utility they are making investments at a level at which the marginal present

discounted value of the private benefit of the investment equals its present discounted value of the private cost. From the same rationale follows that an investment related to family planning services in this case, is efficient if the marginal social benefit (MSB) of the last unit of that investment equals the marginal social cost (MSC). If the social marginal benefit is greater than the cost, society is not investing enough and would benefit as a whole if investments were to be increased to the level at which MSB equals MSC.

FIGURE 6 An efficiency argument for policy intervention



An efficiency argument for policies exists when MSB exceeds the private benefits (see figure 5). An example could be the case of education. Investments in education are likely to increase benefits to the individual, but the overall benefit to society, in terms of increased knowledge stock, are larger. In contrast, an efficiency argument against public interventions exists when private benefit exceeds MSB. This scenario could be exemplified by regulations that prevent efficient production of a basket of commodities. In the case of family planning this could be regulations that limit the variety of methods of contraception. However, regulations may not always be a necessary evil, but in terms of market efficiency, and if we do assume that agents have got perfect information and that there are no market failures, regulations do tend to reduce efficiency.

7.3 Markets and Market Failure

Given how poorly competitive markets are developed in many sub-Saharan African countries access to contraceptives is, to a large extent, provided through the public health system. In the long-run it is very important that the distribution of heavily subsidized contraceptives through the public system or through social marketing does not crowd out private investors. Long-term sustainability usually requires some level of market activity in most countries. The strengths of private markets on their emphasis on efficiency and sustainability will play a crucial role when the developing countries experience social and economic growth and become more self-sufficient (Hanson et al 2001).

Since markets clearly are not operating efficiently in sub-Saharan Africa aid-funded policies are required to reach social goals and increase efficiency. Markets can fail due to a variety of reasons and thereby limit the provision of contraceptives. Market failures can be the result of externalities i.e, the social benefit of a product differs from the private benefit – social benefits are not fully valued in private decisions. The dual protection of male and female condoms represents a positive externality since usage results in beneficial effects on others without an extra cost. Also, although different from an externality is the possibility that contraceptives are merit goods. Society benefits as a whole if consumption of merit goods reaches a certain level. If markets fail to reach this level policies are then required to stimulate consumption (Hanson et al 2001).

Policies that try to lessen the discrepancy between private and social incentives might well reduce efficiency. This is due to the fact that policies with the aim to increase efficiency in one market might have a distorting effect in another. Thus, the overall result could turn out to be less efficiency and less productivity. The issue of having information is crucial for the effectiveness of policies. Behrman (1999) notes that “In the real world in which policy-makers (and everyone else) have very imperfect information, probabilistic statements must instead be made about policy changes that are likely to improve efficiency”. So, it seems reasonable to think that reducing the distortions between private and social incentives in one market would likely increase efficiency.

The ICPD Programme of Action was not just wide-ranging in terms of priority issues it was also very costly and required substantial funding. When funding from donors is scarce and competition for funding is tight it is very important to distinguish what policy is likely to be the more successful one. Since there are many alternatives for policies in family planning and reproductive health they have to be evaluated against the objectives of efficiency and distribution.

Obviously, the direct cost of the policy needs to be considered; not only the direct implementing cost but distortion costs. It can be beneficial for policy makers to define a policy hierarchy. This is a list of different policies that are aimed to improve efficiency by the same amount in a particular market. Lack of information seriously complicates the analysis of how to choose the most efficient policy and ultimately leads to favoring policies that are more transparent.

8. Conclusion and Additional Comments on Future Research

Population is an important feature in the poverty alleviation debate. The devastating ramifications of the HIV pandemic have had a considerable effect on the direction of financial aid allocated to population assistance. While resources are scarce and the needs in developing countries are enormous it is very important to define the parameters within which population policies should be designed and carried out. The share of total population assistance funds allocated to family planning has become gradually smaller since the Cairo conference in 1994 (table 4 below defines the components that ‘family planning’ expenditures consist of and displays the declining trend). This trend is further amplified by the exclusion of a family planning related reproductive health indicator in the MDG monitoring framework. Total donor support for contraceptive commodities and condoms for HIV prevention amounted to \$203 million in 2004 (UNFPA 2005).

This paper has discussed the relevance of the concept ‘unmet need’ for family planning in policy discussions. The simple evidence put forward here suggests that ‘unmet need’ should not be used as a guide for policy design. First and foremost, ‘unmet need’ ought to be disqualified because it is attributing a ‘need’ to women/couples who have not expressed a desire to use contraception. It is unambiguously false to say that all women that do not want another child are therefore in *need* of contraception. In this sense it is hard to combine ‘unmet need’ with the ICPD-mantra of respect for individual choice and freedom. Conversely, the use of ‘unmet need’ is more closely related to the Malthusian or neo-Malthusian theory that argues for drastic solutions to the ‘population problem’. Behrman (2001) concludes “The assumption that I make is not that people do what is best for them in the judgment of others, including ‘international experts’, but that they do what adds the greatest welfare for themselves in their own perceptions, given what they believe to be the options and constraints.”

Economic theory suggests two broad justifications for policy; distributional and efficiency. Since ‘unmet need’ is fundamentally different from “demand” and women/couples in the ‘unmet need’ group are not demanding contraceptives in the economic sense, ‘unmet need’ is simply irrelevant as a policy guide. The standard economic model of fertility (in this paper portrayed by Becker and Barro’s model from 1988) underlines the large costs and long-term

nature of the decision about fertility in relation to the relatively small costs of averting births through family planning. This is the critical difference between the two paradigms on fertility behavior being discussed in this paper – economists versus demographers. Some of the assumptions in the Q/Q-model might seem hard to accept, but the long-term nature of the decision gives us an opportunity to focus on what reductions in fertility rates really are determined by: women’s status in society, better education for girls and young women and improved child health. The small costs of contraceptives, which according to DHS statistics have no bearing on their use anyway, should not detract from these larger issues. The population problem must not be reduced to the existence of an ‘unmet need’ as it is counter-productive for a number of reasons. It shifts the attention to the supply of contraceptives from the true reasons why women in sub-Saharan Africa have TFRs well above the world average. The concept ignores all other preferences women have. Needs in developing countries are immense – not just in health related matters but in others, too. Any policy carried out should be based on what the people want and what they demand – and not what they are assumed to need merely because they do not want to have another child in the next 18 months.

While economic models on fertility behavior are useful in explaining demand patterns, they fall short in explaining other patterns. It is questionable how appropriate it is to compare the decision to have children with the decision to acquire any other economic asset. As Kabeer (1996) points out, there is a tendency among economists to forget about or suppress the human dimension in these types of decisions. Therefore, more research on the nuances of fertility behavior is essential. One dimension of fertility behavior that should be investigated further is the power dynamic within the household. Table 8 displays DHS data of actual and ideal fertility rates for men and women in a number of different countries. In only one of these surveys are men’s preferences lower than women’s and in addition actual fertility rates are higher than men’s ideal fertility in 6 surveys. These statistics call for further development of models focusing on the relative bargaining power of the sexes in the fertility decision. In light of the growing evidence on the close correlation between a woman’s relative wealth and the health, education and welfare of her children, more research in this area could increase our knowledge of the complexity of human fertility behavior. The gendered aspect of the fertility decision represents an angle of the fertility decision yet to be captured by either demographic or economic theory. Kabeer (1996) concludes that “...because women bear the emotional, bodily and social ramifications of having children differently and more intensely than men, they may assess the costs and benefits differently”.

References

- Anand, S and J. Morduch. (1996). “*Poverty and the ‘Population Problem’*”. Revised version of a paper presented at the March 1995 IUSSP Seminar on Demography and Poverty
- Arroyo III, C. R. (1993) “*Economic Approaches to Modeling Fertility Determinants: A Selective Review*” The World Bank. Population and Human Resources Department. WPS 1085.
- Becker, Gary S. (1992) “*Fertility and the economy*”. Journal of Population Economics. 5:185 – 201.
- Becker, Gary S. and Barro, R. (1988) “*A Reformulation of the Economic Theory of Fertility*” The Quarterly Journal of Economics, Volume 103 (1), February 1998, pp. 1-25
- Behrman, J. (2001) “*Why Micro Matters*” in *Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World*. Birdsall, Kelley, and Sinding (eds). 2001. OUP
- Bernstein, Stan. (2005) “*A Proposal for Including a Measure of Unmet Need for Contraception and Adolescent Fertility or Early Marriage Levels as Indicators of the Reproductive Health Component of Gender Equality.*” Background paper prepared for the UN Millennium Project. New York
<http://unstats.un.org/unsd/mi/techgroup/subgroups/IAEG%20submission%20on%20unmet%20need%20v3.pdf>
- Bhusan, Indu (1997) “*Understanding Unmet Need*” Working Paper No 4. The John Hopkins University School of Public Health, Center for Communication Programs.
- Bloom, D., Canning, D. and Sevilla, J (2003) “*The Demographic Dividend*” RAND
- Bloom, David E., and Jeffrey D. Sachs (1998). “*Geography, Demography, and Economic Growth in Africa*” *BPEA*, no. 2: 207–73.
- Boserup, E. (1965). “*The Conditions of Agriculture Progress*”, Allen and Unwin, London.
- Bongaarts, J (2005). “*The Causes of Stalling Fertility Transitions*” Paper presented at the session Fertility Decline: Onset and Stagnation at the IUSSP XXV International Population Conference in Tours July 2005
- Casterline, J. and Sinding, S. (2000). “*Unmet Need for Family Planning in Developing Countries and Implications for Population Policy*” No. 135
- Daugherty, Helen G. and K. C.W. Kammeyer (1996). “*An Introduction to Population*”. 2nd Edition. London: Guildford Press
- Ehrlich, I. and F. Lui (1997). “*The problem of population and growth: A review of the literature from Malthus to contemporary models of endogenous population and endogenous growth*” Journal of Economic Dynamics and Control 21 (1997) 205-242
- Hanson, K. Kumaranayake, L. and Thomas, I. (2001) “*Ends versus means: the role of markets and access to contraceptives*” Health Policy and Planning; 16(2): 125-136.
- ICPD Programme of Action (2004) ICPD. Adopted at the International Conference on population and development, Cairo, 5-13 September 1994. New York: United Nations Population Fund 2004
- Kabeer, N. (1996). “*Gender, demographic transition and the economics of family-size: Population Policy for a human-development*” Occasional Paper No. 7, Geneva: UNRISD
- Kuznets, Simon (1967). “*Population and economic growth*” Proceedings of the American philosophical society, vol. 111, No 3, June 1967
- Lewis, M.A. (1986) “*Do contraceptive prices affect demand?*” Studies in family planning, Vol. 17, No. 3 (May – Jun., 1986) 126-135.

Lipton, M. and Ravallion, M. (1995) “*Poverty and policy*” in Behrman J. and Srinivasan, T.N. (eds) Handbook of Development Economics, 3, Amsterdam, Elsevier

Malthus, T.R. (1798) “*An Essay on the Principle of Population*” Oxford: Oxford University Press

Matheny, G. (2004) “*Family Planning Programs: Getting the most for the Money*” International Family Planning Perspectives. Volume 30, Number 3, September 2004

Merrick, T. 2001. “*Population and poverty: A review of reviews,*” in Nancy Birdsall, Allen C. Kelley, and Steven Sinding (eds.), *Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World*. New York: Oxford University Press, pp. 201–212.

Pritchett, L.H.(1994). “*Desired fertility and the impact of population policies*”. Population and Development Review, Vol. 20(1).

Quisumbing, A. and J. Maluccio (2000). “*Intra-Household Allocation and Gender Relations: New Empirical Evidence from Four Developing Countries*” Washington DC: International Food Policy Research Institute, FCND Discussion Paper #84

Sachs J., J. McArthur, G. Schmidt-Traub, M. Kruk, C. Bahadur, M. Faye, and G. McCord (2004) “*Ending Africa’s Poverty Trap*” Brookings Papers on Economic Activity 1:2004

Sachs, J. (2005) “*The End of Poverty – Economic possibilities for our time*” New York: The Penguin Press

Sen, A. (1994). “*Population: Delusion and Reality*” New York Review of Books. September 22, 1994

Sen, A. (1999). *Development as Freedom*. New York: Anchor Books

UN Commission on Population and Development (2005) “*The flow of financial resources for assisting in the implementation of the Programme of Action of the International Conference on Population and Development*” January 2005. United Nation: New York

UN Millennium Project (2005) “*Population, Reproductive Health and the Millennium Development Goals*”. Messages from the UN Millennium Project Reports. Washington: UNDP.

UN Millennium Project; Task Force on Child Health and Maternal Health (2005) “*Who has got the power? Transforming health systems for women and children*” New York, USA

UNFPA (2002). “*Adding it up: The Benefits of investing in Sexual and Reproductive Health Care*”, New York: United Nations Population Fund

UNFPA (2004). “*State of the World Population*” New York: United Nations Population Fund

UNFPA (2005) “*Donor support for contraceptives and condoms for STI/HIV prevention*” New York: United Nations Population Fund. (Forthcoming)

Williamson, Jeffrey G. (2001). “*Demographic Change, Economic Growth, and Inequality*” Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World. Birdsall, Kelley, and Sinding (eds). 2001. OUP

Data Sources

Demographic Health Surveys. Internet-site: www.measuredhs.com (StatCompiler)

United Nations Population Division (UNPD)

Human Development Report 2004 (World Bank)

Appendix

Table 1 Health in the Millennium Development Goals
Goals, targets and indicators related to health

Health target		Health Indicators	
Goal 1	Eradicate extreme poverty and hunger		
<i>Target 1</i>	Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day		
<i>Target 2</i>	Halve, between 1990 and 2015, the proportion of people who suffer from hunger.	4. 5.	Prevalence of underweight children under five years of age. Proportion of population below minimum level of dietary energy consumption
Goal 2	Achieve universal primary education		
<i>Target 3</i>	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling		
Goal 3	Promote gender equality and empower women		
<i>Target 4</i>	Eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015		
Goal 4	Reduce child mortality		
<i>Target 5</i>	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	13. 14. 15.	Under-five mortality rate Infant mortality rate Proportion of one-year-old children immunized against measles
Goal 5	Improve maternal health		
<i>Target 6</i>	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	16. 17.	Maternal mortality ratio Proportion of births attended by skilled health personnel
Goal 6	Combat HIV/AIDS, Malaria and other diseases		
<i>Target 7</i>	Have halted by 2015 and begun to reverse the spread of HIV/AIDS	18. 19. 20.	HIV prevalence among pregnant women aged 15-24 years Condom use rate of the contraceptive prevalence rate Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
<i>Target 8</i>	Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	21. 22. 23. 24.	Prevalence and death rates associated with malaria Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures Prevalence and death rates associated with tuberculosis Proportion of tuberculosis cases detected and cured under DOTS (Directly Observed Treatment Short-course)
Goal 7	Ensure environmental sustainability		
<i>Target 9</i>	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	29.	Proportion of population using solid fuels
<i>Target 10</i>	Halve by 2015 the proportion of people without sustainable access to safe drinking-water and sanitation	30.	Proportion of population with sustainable access to an improved water source, urban and rural
<i>Target 11</i>	By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers	31.	Proportion of population with access to improved sanitation, urban and rural

Goal 8	Develop a global partnership for development		
<i>Target 12</i>	Develop further an open, rule-based, predictable, non-discriminatory trading and financial system		
<i>Target 13</i>	Address the special needs of the least developed countries		
<i>Target 14</i>	Address the special needs of landlocked countries and small island developing states		
<i>Target 15</i>	Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term		
<i>Target 16</i>	In cooperation with developing countries, develop and implement strategies for decent and productive work for youth		
<i>Target 17</i>	In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries	46.	Proportion of population with access to affordable essential drugs on a sustainable basis
<i>Target 18</i>	In cooperation with the private sector, make available the benefits of new technologies, especially information and communications		
<p>Sources: "Implementation of the United Nations Millennium Declaration", Report of the Secretary-General, A/57/270 (31 July 2002), first annual report based on the "Road map towards the implementation of the United Nations Millennium Declaration", Report of the Secretary-General, A/56/326 (6 September 2001); United Nations Statistics Division, Millennium Indicators Database, verified in July 2004; World Health Organization, Department of MDGs, Health and Development Policy (HDP).</p>			

Table 2 Individual Contraceptive Requirements and Prices

Source: RH Commodities Required to Achieve the ICPD Goals 2000-2015; New York, UNFPA (forthcoming)

Method	Units required for one couple-year of protection ^a	Price per unit (U.S. dollars) ^b	Cost per couple-year of protection ^c
Female sterilization	1/9	9.09	1.01
Male sterilization	1/9	4.95	0.55
IUDs	1/3.5	0.576	0.16
Pills	15	0.24	3.60
Injectables	4	0.965	3.86
Condoms	120	0.035	4.20
<p>^a Sterilization, though its effect is permanent, is assumed to provide only nine years of protection because many are not sterilized until late in their reproductive careers.</p>			
<p>^b Prices are weighted averages of those normally paid by UNFPA and USAID, with weights reflecting respective shares of commodities they supply.</p>			
<p>^c Calculated from preceding columns.</p>			

Table 3 Primary funds of donor countries for population assistance as a percentage of Official development assistance, 1993-2003^a

Source: Financial Resource Flows for Population Activities in 2003, UNFPA 2005 (forthcoming)

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Australia	0.67	1.65	2.26	2.98	4.26	4.64	3.11 ^b	1.49	1.50 ^c	2.15	3.15
Austria	0.15	0.11	0.37	0.13	0.11	0.39	0.27 ^d	0.21	0.18 ^c	0.29	0.54
Belgium	0.28	0.40	0.54	0.58	1.28	1.15	2.20	1.92	2.21 ^e	4.12	1.40
Canada	1.04	1.01	1.80	2.05	1.69	2.28	0.83	2.15	0.83	4.13	2.56
Denmark	2.20	2.25	3.06	3.56	2.87	3.53	2.99	2.68	2.99	4.49	3.41 ^f
Finland	2.47	2.68	5.79	4.85	4.57	5.84	6.10	5.33	6.10	5.27	4.26
France	0.17	0.16 ^g	0.16 ^h	0.22	0.26 ⁱ	0.29 ^j	0.14 ^d	0.30	0.20	1.53	0.77
Germany	0.73	1.68	1.93	1.28	2.09	2.24	2.18	1.92	2.18	2.01	1.97
Greece									0.01 ^e	0.02	2.57
Ireland ^k	NA	0.20	1.92	0.41	0.00	0.00	2.18	1.80	2.18	2.96	5.26
Italy	0.58	0.65 ^g	0.27	0.15	0.17	0.28	0.56	1.81	1.54 ^c	0.97 ^l	1.11
Japan	0.74	0.62	0.65	0.99 ^m	1.00 ⁿ	0.84	1.17	0.97	1.17	1.94	1.44
Luxembourg	1.58	0.21	1.43	1.53	1.24 ⁱ	3.80	3.99	8.45	3.99 ^c	5.07 ^o	4.37 ^f
Netherlands	1.48	1.74	2.68	3.38 ^p	4.97	3.92	4.16	5.43	4.16	4.92	6.79
New Zealand	0.77	0.68	0.94	1.00	1.17	1.78	1.92	2.04	1.92	2.70	3.50
Norway	4.22	3.58	3.80	3.52	4.16	5.40	3.19	4.74	3.19	4.76	4.49
Portugal ^k	NA	0.02	0.0	0.11	0.17	0.48	0.26	0.15	0.26	0.18	0.35
Spain	0.05	0.04 ^g	0.04 ^h	0.59	0.60 ⁱ	0.31	0.83	0.52	0.83	0.19	1.48
Sweden	2.09	2.46	2.62 ^q	2.94	3.07	4.98	3.38	4.07	3.38	3.07	3.81
Switzerland	0.78	0.84	1.58	1.59	1.83	1.98	2.59	1.81	2.59	2.49	2.43
United Kingdom	1.62	1.81	3.11	3.34	3.42	3.26	1.77	3.77	1.77	3.43	9.56
United States	3.77	4.66	9.06	7.04	9.63	7.05	8.32	6.62	8.32	7.25	11.45
All donor countries	1.40	1.65	2.32	2.46	3.18	2.82	2.45	2.93	3.23 ^e	3.65	5.12

^a Figures for official development assistance (ODA) are drawn from www.oecd.org/dac/htm/dacstats.htm.

^b The 1999 figure for Australia only includes expenditures for projects exclusively dedicated to population activities and excludes expenditures for the population component in integrated projects.

^c Information on expenditures for population projects/programmes was not provided or fully reported. As a result, 2001 project/programme figures are estimated based on 2000 data.

^d Austria and France only reported information on contributions to multilateral donors in 1999. No information on project expenditures was reported.

^e 2001 figures differ from the figures in the 2001 report, due to additional data received.

^f Information on project/programme expenditures was not reported. As a result, project/programme figures are estimated based on 2002 data.

^g Figures on expenditures for population assistance for 1994 were not provided. As a result, 1994 figures are estimated at the 1993 level.

^h Figures on expenditures for population assistance for 1995 were not provided. As a result, 1995 figures are estimated at the 1993 level, the latest year for which figures were reported.

ⁱ Figures on expenditures for population assistance for 1997 were not provided. As a result, 1997 figures are estimated at the 1996 level.

^j Figures on expenditures for population assistance for 1998 were not provided. As a result, 1998 figures are estimated at the 1996 level, the latest year for which figures were reported.

^k NA indicates no report for the country in that year.

^l Information on project/programme expenditures was copied from 2000.

^m Figures on expenditures for population assistance for 1996 were not provided. As a result, 1996 figures are estimated at the 1995 level.

ⁿ Figures on expenditures for population assistance in 1997 were not provided. As a result, 1997 figures are estimated at the 1995 level, the latest year for which figures were reported.

^o 2002 project/programme expenditures have been estimated by the Ministry of Foreign Affairs of Luxembourg.

^p Expenditures for the Netherlands are without contributions to national NGOs that receive core funding for development activities (so called "MFOs"), and without payment to experts working in the field of population activities overseas (so called "suppletie deskundigen"). If these figures would be added to the primary funds, the percentage of ODA of the Netherlands that is used for population activities would be around 4 per cent.

Table 4 Final donor expenditures for population assistance, by category of population activity, 1995 – 2003 *a,b*

Source: Financial Resource Flows for Population Activities in 2003, UNFPA 2005 (forthcoming)

	1995	1996	1997	1998	1999	2000 ^c	2001	2002 ^{d,e,f}	2003
Family planning services	55%	37%	40%	43%	37%	29%	30%	23%	11%
Basic reproductive health services	18%	33%	27% ^g	22% ^h	30% ⁱ	29% ⁱ	24%	25%	28%
Sexually transmitted diseases and HIV/AIDS activities	9%	16%	18%	20%	23%	32%	39%	42%	48%
Basic research, data and population and development policy analysis	18%	14%	15%	15%	11%	9%	8%	10%	13%
Total activities	100%	100%	100%	100%	100%	100%	100%	100%	100%
(Millions of current \$US)	1,314	1,511	1,632	1,681	1,655	1,781	2,051	3,162	3,847

a Percentages have been rounded off and may not add to 100 per cent.

b The development banks are not included in the final expenditures shown, as the banks' loan agreements are often disbursed over several years.

c 2000 data differ from the figures in the 2000 report, due to additional information received.

d Distribution for Germany has been partially estimated based on 2001 percentages. Distribution for Luxembourg has been estimated based on 2001 data. Distribution for Italy has been estimated based on 2000 data.

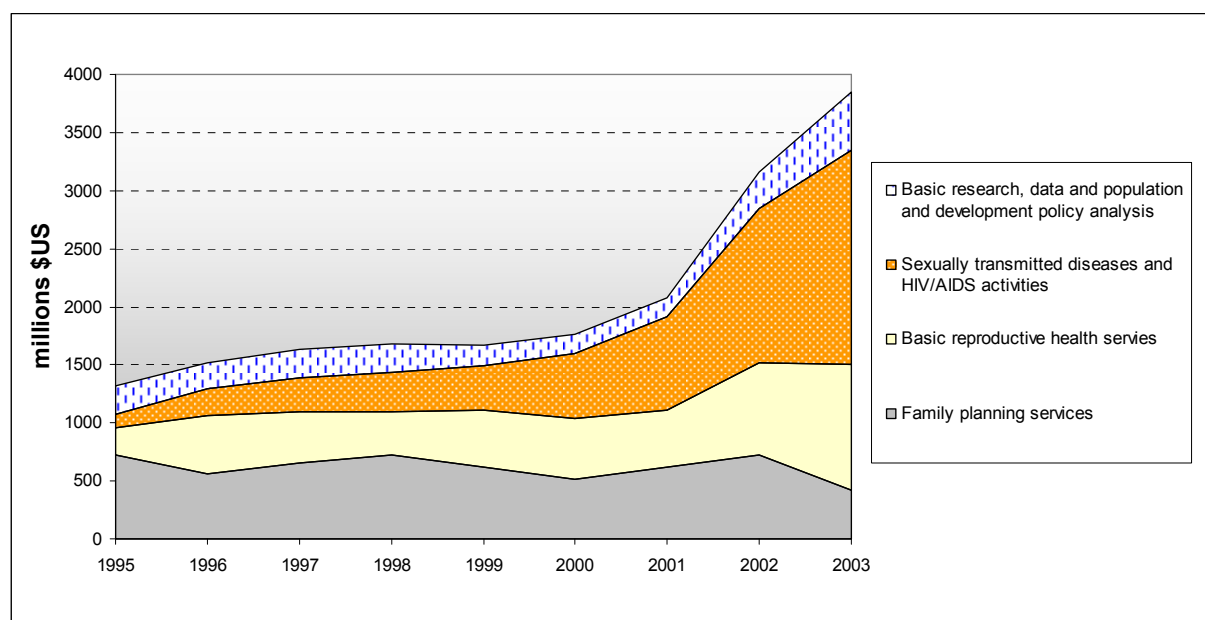
e Distribution for the European Union has been estimated by NIDI based on data from the European Commission and the DAC Watch of the European Union, IPPF, January 2002.

f 2002 data differ from the figures in the 2002 report, due to additional data received.

g Basic reproductive health care services for Sweden and the Netherlands included family planning services.

h Basic reproductive health care services for Sweden included family planning services.

i Basic reproductive health care services for Sweden and the United Kingdom included family planning services.



The Family planning component includes: Contraceptive commodities and service delivery; capacity-building for information, education and communication regarding family planning and population and development issues; national capacity-building through support for training; infrastructure development and upgrading of facilities; policy development and programme evaluation; management information systems; basic service statistics; and focused efforts to ensure good quality care.

Table 5 Demographic Indicators for sub-Saharan Africa
Source: UNFPA (2005)

Country	Population 000s	Population growth rate (04/05)	Women of Reproductive Age (15-49)	Unmet Need FP	TFR	CPR	Maternal Mortality Rate	HIV prevalence
Angola	15,941	1.8%	3,650	27.2%	6.6	6.3%	1,700	3.9%
Benin	8,439	3.2%	1,923	27.2%	5.6	18.3%	850	1.9%
Botswana	1,765	-0.2%	459	27.0%	3.1	40.4%	100	37.3%
Burkina Faso	13,228	2.3%	2,935	25.8%	6.5	11.6%	1,000	4.2%
Burundi	7,548	2.7%	1,777	25.0%	6.8	15.7%	1,000	6.0%
Cameroon	16,322	1.3%	3,915	19.7%	4.4	19.2%	730	6.9%
Cape Verde	507	1.6%	133	14.0%	3.6	53.2%	150	9.7%
CAR	4,038	3.2%	938	16.2%	4.8	27.9%	1,100	13.5%
Chad	9,749	3.0%	2,140	9.7%	6.7	8.1%	1,100	4.8%
Comoros	798	1.8%	194	34.6%	4.6	25.8%	480	0.0%
Congo	3,999	3.0%	882	27.2%	-	23.7%	510	4.9%
Congo, Dem. Republic	57,549	2.3%	12,716	27.3%	6.7	31.5%	990	4.2%
Côte d'Ivoire	18,154	2.7%	4,210	27.7%	4.8	13.9%	690	7.0%
Djibouti	793	4.0%	191	24.0%	4.8	27.0%	730	2.9%
Equatorial Guinea	504	1.6%	112	27.2%	5.9	23.7%	880	0.0%
Eritrea	4,401	2.4%	1,042	27.5%	5.3	8.2%	630	2.7%
Ethiopia	77,431	2.4%	17,844	35.8%	5.6	8.2%	850	4.4%
Gabon	1,384	2.3%	335	28.0%	3.8	32.5%	420	8.1%
Gambia	1,517	2.1%	367	26.4%	4.5	9.7%	540	1.2%
Ghana	22,113	2.2%	5,418	23.0%	4.1	21.5%	540	3.1%
Guinea	9,402	3.0%	2,058	24.2%	5.7	6.0%	740	3.2%
Guinea-Bissau	1,586	1.3%	346	27.4%	7.1	7.7%	1,100	0.0%
Kenya	34,256	2.7%	8,272	23.9%	5.0	38.9%	1,000	6.7%
Lesotho	1,795	1.1%	475	21.5%	3.5	30.4%	550	28.9%
Liberia	3,283	3.0%	734	33.0%	6.8	6.5%	760	5.9%
Madagascar	18,606	2.2%	4,312	32.0%	5.1	18.9%	550	1.7%
Malawi	12,884	0.9%	2,827	29.7%	5.9	30.3%	1,800	14.2%
Mali	13,518	3.0%	2,970	28.5%	6.8	8.2%	1,200	1.9%
Mauritania	3,069	3.4%	724	31.6%	5.6	8.0%	1,000	0.6%
Mozambique	19,792	1.5%	4,759	22.5%	5.3	5.7%	1,000	12.2%
Namibia	2,031	0.5%	490	21.9%	3.7	29.1%	300	21.3%
Niger	13,957	2.2%	2,947	16.6%	7.7	14.1%	1,600	1.2%
Nigeria	131,530	2.4%	29,834	17.4%	5.6	15.4%	800	5.4%
Rwanda	9,038	3.3%	2,272	35.6%	5.5	13.2%	1,400	5.1%
Senegal	11,658	3.5%	2,836	34.8%	4.8	12.7%	690	0.8%
Sierra Leone	5,525	2.6%	1,279	27.4%	6.5	4.6%	2,000	6.0%
Somalia	8,228	3.6%	1,943	24.0%	6.2	27.0%	1,100	5.0%
South Africa	47,432	-0.2%	12,709	15.0%	2.7	56.5%	230	21.5%
Sudan	36,233	1.1%	8,869	25.0%	4.2	8.4%	590	2.3%
Swaziland	1,032	2.4%	263	22.4%	3.7	27.8%	370	38.8%
Tanzania	38,329	1.7%	9,019	21.8%	4.7	25.4%	1,500	8.8%
Togo	6,145	1.2%	1,451	32.3%	5.1	25.7%	570	4.1%
Uganda	28,816	1.9%	6,029	34.6%	7.1	18.7%	880	4.1%
Zambia	11,668	0.6%	2,606	27.4%	5.4	34.4%	750	16.5%
Zimbabwe	13,010	2.8%	3,249	12.9%	3.4	52.8%	1,100	24.6%

Table 6 Changes in Unmet Need

Source: Demographic Health Surveys (2005); www.measuredhs.com.

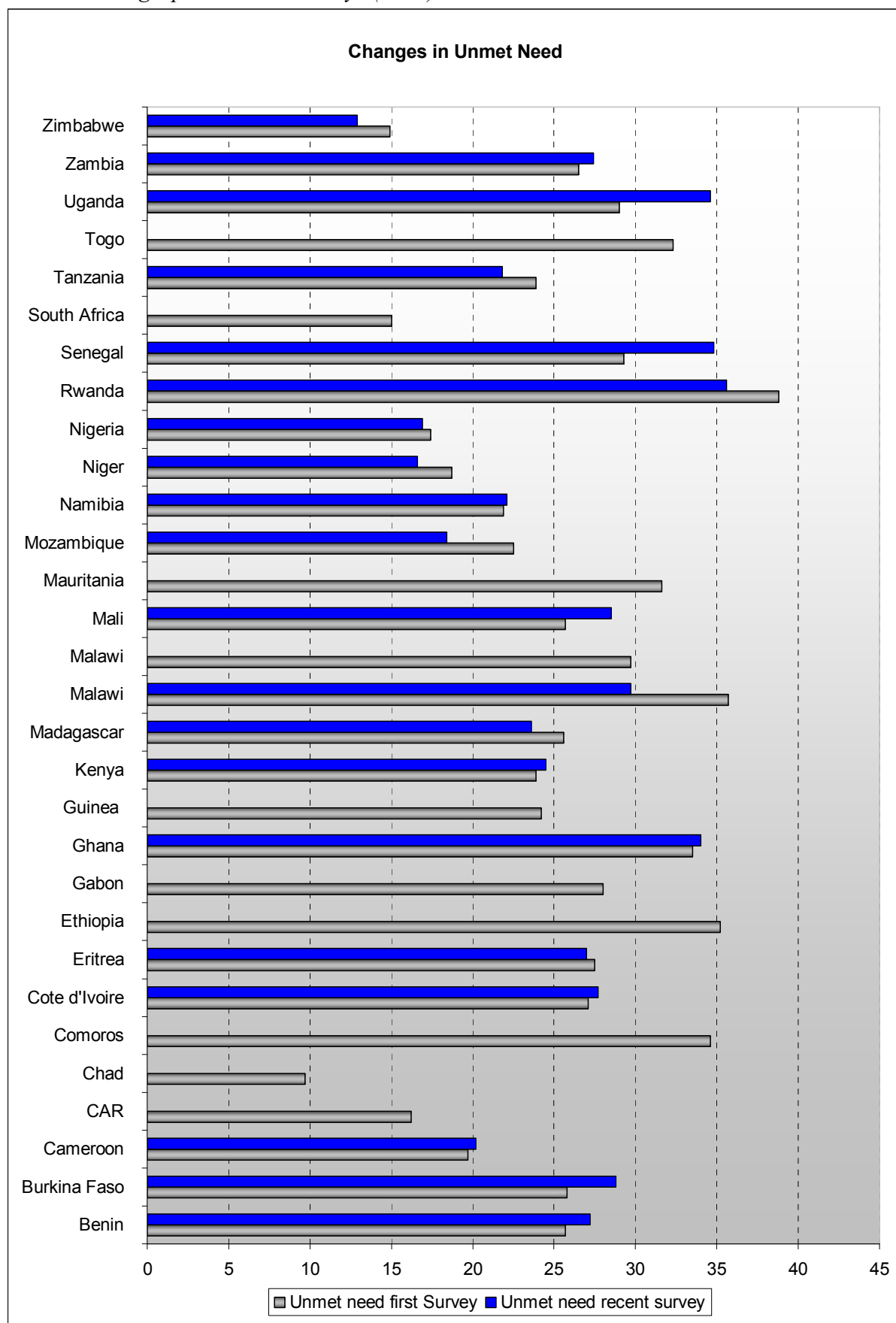


Table 7 Knowledge of Modern Methods of Contraception*Source: Demographic Health Surveys (2005); www.measuredhs.com.*

Country	Year of Survey	%	No Women in survey
Benin	2001	90	6219
Botswana	1988	95.1	4368
Burkina Faso	2003	89.5	12477
Burundi	1987	58	3970
Cameroon	1998	80.3	5501
CAR	1994/95	68	5884
Chad	1996/97	42.1	7454
Comoros	1996	95.9	3050
Cote d'Ivoire	1998/99	90	3040
Eritrea	2002	88.8	8754
Ethiopia	2000	80.8	15367
Gabon	2000	95.5	6183
Ghana	2003	97.5	5691
Guinea	1999	70.6	6753
Kenya	2003	94.4	8195
Liberia	1986	70.3	5239
Madagascar	2003/2004	82	7949
Malawi	2000	96.5	13220
Mali	2001	76.3	12849
Mauritania	2000/01	67.3	7728
Moçambique	2003	90.8	12418
Namibia	2000	97.2	6755
Niger	1998	75	7577
Nigeria	2003	76.7	7620
Ondo State	1986	47.1	4213
Rwanda	2000	94.2	10421
Senegal	1997	82.2	8593
South Africa	1998	96.5	11735
Sudan	1990	71	5860
Tanzania	1999	90.5	4029
Togo	1998	93.4	8569
Zambia	2001/02	97.7	7658
Zimbabwe	1999	96.7	5907

Percentage of all women, of currently married women, and of sexually active unmarried women who know any contraceptive method, by specific method.

Table 8 Total Fertility Rate vs. Ideal Fertility*Source: Demographic Health Surveys (2005); www.measuredhs.com.*

Country	Year of Survey	Women Ideal	Men Ideal	TFR (15-49)	Men-women ideal	Women ideal-actual	Men ideal-actual
Benin	2001	4.9	6.6	5.6	1.7	-0.7	1
Bolivia	1998	2.6	3	4.2	0.4	-1.6	-1.2
Brazil	1996	2.3	2.6	2.5	0.3	-0.2	0.1
Burkina Faso	1999	5.7	7	6.4	1.3	-0.7	0.6
Cameroon	1998	6	7.2	4.8	1.2	1.2	2.4
Chad	1997	8.3	13.4	6.4	5.1	1.9	7
Cote d'Ivoire	1999	5.4	6.2	5.2	0.8	0.2	1
Dominican Republic	1999	3	4	2.7	1	0.3	1.3
Ethiopia	2000	5.3	6.4	5.5	1.1	-0.2	0.9
Gabon	2000	4.9	5.8	4.2	0.9	0.7	1.6
Ghana	1998	4.3	4.6	4.4	0.3	-0.1	0.2
Guinea	1999	5.7	7.1	5.5	1.4	0.2	1.6
Haiti	2000	3.1	3.3	4.7	0.2	-1.6	-1.4
Kazakhstan	1999	2.8	3.2	2	0.4	0.8	1.2
Kenya	1998	3.8	4	4.7	0.2	-0.9	-0.7
Malawi	2000	5	4.8	6.3	-0.2	-1.3	-1.5
Mali	2001	6.2	7.7	6.8	1.5	-0.6	0.9
Mauritania	2001	6.2	7.6	4.5	1.4	1.7	3.1
Mozambique	1997	5.9	7.4	5.2	1.5	0.7	2.2
Nepal	2001	2.6	2.8	4.1	0.2	-1.5	-1.3
Niger	1998	8.2	10.8	7.2	2.6	1	3.6
Nigeria	1999	6.1	7.8	4.7	1.7	1.4	3.1
Senegal	1997	5.3	7.9	5.7	2.6	-0.4	2.2
Tanzania	1996	5.5	5.9	5.8	0.4	-0.3	0.1
Togo	1998	4.5	5.2	5.2	0.7	-0.7	0
Turkey	1998	2.4	2.7	2.6	0.3	-0.2	0.1
Uganda	2001	4.8	5.6	6.9	0.8	-2.1	-1.3
Zambia	1996	5.3	5.9	6.1	0.6	-0.8	-0.2
Zimbabwe	1999	3.9	4.1	4	0.2	-0.1	0.1

Table 9 Reasons for Not Using Contraceptives

	Benin	Burkina Faso	Cameroun	CAR	Chad	Comoros	Cote d'Ivoire	Eritrea	Ethiopia	Gabon	Ghana	Guinea	Kenya	Madagascar	Malawi
Not married	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.2%	0.0%	0.0%	0.5%
Infrequent sex	11.9%	10.4%	1.4%	2.4%	1.6%	1.1%	1.3%	2.9%	1.5%	2.4%	5.5%	2.5%	5.1%	2.8%	5.4%
Menopausal, hysterectomized	12.4%	9.6%	6.8%	9.2%	5.2%	9.0%	6.9%	3.1%	7.4%	1.2%	6.3%	8.8%	8.9%	4.9%	8.2%
Subfecund, infecund	8.1%	12.7%	5.7%	3.6%	1.4%	2.5%	9.2%	6.2%	6.7%	13.6%	14.9%	1.6%	12.4%	12.6%	21.3%
Postpartum amenorrhoeic/breastfeeding	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wants more children	17.6%	17.5%	48.3%	70.6%	40.8%	40.7%	39.8%	60.3%	41.8%	31.3%	13.8%	55.6%	13.9%	19.8%	7.9%
Respondent opposed	14.7%	6.5%	9.1%	2.4%	9.5%	4.2%	12.3%	6.2%	7.2%	8.9%	5.8%	10.4%	10.4%	9.6%	11.3%
Spouse opposed	2.7%	7.2%	2.6%	1.5%	1.4%	3.2%	4.6%	1.2%	3.2%	1.9%	3.0%	2.1%	5.0%	2.5%	8.3%
Others opposed	0.2%	0.0%	0.2%	0.1%	0.1%	0.0%	0.5%	0.0%	0.0%	0.3%	0.0%	0.1%	0.4%	0.4%	1.3%
Religious prohibition	3.4%	3.6%	5.2%	1.7%	4.3%	3.5%	3.1%	5.6%	7.6%	7.9%	3.5%	4.2%	15.1%	1.1%	5.4%
Other opposition to use	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%
Lack of knowledge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Knows no method	5.2%	3.9%	10.4%	2.8%	22.2%	0.7%	8.3%	4.4%	7.9%	3.9%	4.4%	5.6%	2.0%	4.5%	2.8%
Knows no source	2.9%	5.8%	3.3%	1.7%	7.1%	0.5%	4.2%	3.9%	1.8%	2.1%	1.3%	0.8%	0.3%	3.5%	0.9%
Health concerns	5.5%	3.9%	0.7%	0.6%	0.4%	2.8%	2.1%	1.9%	7.9%	7.3%	7.6%	2.5%	8.6%	10.9%	8.7%
Fear of side effects	8.8%	6.1%	2.3%	0.5%	1.3%	11.8%	2.0%	2.9%	2.5%	5.9%	25.6%	1.9%	13.4%	17.7%	12.1%
Lack of access	0.3%	0.7%	0.3%	0.1%	1.7%	0.0%	0.2%	0.1%	0.2%	0.0%	0.6%	0.2%	0.2%	0.4%	0.6%
Cost too much	1.1%	2.5%	0.5%	0.0%	0.2%	0.7%	0.0%	0.1%	0.1%	1.1%	1.2%	0.3%	0.0%	0.5%	0.3%
Inconvenient to use	0.5%	0.4%	0.7%	0.0%	0.4%	1.1%	2.9%	0.1%	0.2%	0.6%	1.0%	0.5%	0.3%	0.9%	0.2%
Interfere with body	1.0%	0.8%	0.0%	0.8%	0.9%	0.4%	0.1%	0.0%	0.4%	0.6%	1.4%	0.1%	1.1%	0.9%	3.7%
Other	0.5%	1.1%	0.6%	1.6%	0.9%	15.3%	0.9%	1.1%	2.6%	9.7%	1.4%	1.1%	0.3%	0.2%	0.1%
DK	3.1%	7.2%	0.6%	0.0%	0.3%	1.1%	0.7%	0.3%	0.9%	1.3%	2.0%	0.1%	2.2%	6.4%	0.8%
Missing	0.2%	0.1%	0.1%	0.0%	0.1%	1.6%	0.2%	0.0%	0.0%	0.0%	0.4%	0.2%	0.1%	0.3%	0.2%

Source: Demographic Health Surveys (2005); www.measuredhs.com.

Table 9 (cont'd). Reasons for Not Using Contraceptives

	Mali	Mauritania	Mozambique	Namibia	Niger	Nigeria	Rwanda	Senegal	South Africa	Tanzania	Togo	Uganda	Zambia	Zimbabwe
Not married	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
Infrequent sex	3.6%	3.5%	3.8%	3.9%	1.0%	3.7%	7.8%	1.5%	4.4%	0.0%	4.6%	6.0%	6.6%	6.8%
Menopausal, hysterectomized	3.2%	1.1%	3.1%	16.9%	6.6%	3.5%	14.0%	8.1%	14.9%	0.0%	13.2%	5.7%	15.3%	17.9%
Subfecund, infecund	5.9%	11.4%	19.5%	11.2%	2.6%	8.0%	3.3%	9.6%	8.4%	0.0%	12.3%	23.3%	25.1%	17.0%
Postpartum amenorrheic/breastfeeding	0.0%	0.0%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wants more children	16.3%	15.9%	49.4%	21.0%	33.2%	36.1%	19.8%	31.1%	23.8%	0.0%	28.0%	10.6%	16.2%	9.3%
Respondent opposed	22.9%	11.3%	5.3%	11.1%	5.9%	13.7%	3.0%	3.0%	8.4%	0.0%	7.8%	4.0%	5.7%	4.0%
Spouse opposed	9.9%	3.7%	3.8%	4.7%	3.3%	3.9%	5.0%	3.2%	4.9%	0.0%	2.5%	6.8%	3.6%	4.8%
Others opposed	0.1%	0.2%	0.0%	0.3%	0.0%	0.1%	0.1%	0.4%	0.0%	0.0%	0.3%	0.1%	0.0%	0.1%
Religious prohibition	4.8%	21.5%	1.2%	2.5%	3.4%	8.5%	12.2%	10.9%	4.2%	0.0%	4.1%	3.5%	1.8%	15.7%
Other opposition to use	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lack of knowledge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Knows no method	8.2%	4.2%	2.9%	4.1%	7.4%	7.3%	2.3%	0.0%	1.6%	0.0%	2.6%	3.1%	1.4%	0.5%
Knows no source	3.2%	2.9%	1.2%	0.3%	7.8%	1.2%	4.1%	0.0%	0.7%	0.0%	4.9%	1.8%	1.8%	0.0%
Health concerns	5.1%	4.0%	2.1%	8.7%	1.4%	3.1%	4.8%	1.9%	17.2%	0.0%	1.9%	5.8%	3.0%	4.1%
Fear of side effects	3.7%	3.2%	2.2%	2.3%	1.5%	5.5%	14.9%	2.8%	2.3%	0.0%	8.0%	17.6%	12.0%	6.1%
Lack of access	0.3%	0.2%	0.7%	0.2%	2.3%	0.2%	0.6%	0.6%	0.0%	0.0%	0.2%	0.4%	1.2%	0.2%
Cost too much	0.9%	0.1%	0.3%	0.7%	0.3%	0.1%	1.2%	0.1%	0.0%	0.0%	1.3%	1.6%	0.0%	2.5%
Inconvenient to use	0.5%	0.1%	2.6%	0.0%	0.3%	0.2%	0.8%	1.0%	0.5%	0.0%	0.6%	1.0%	0.5%	0.4%
Interfere with body	4.6%	0.2%	0.8%	1.9%	5.5%	0.6%	0.8%	0.0%	2.2%	0.0%	0.8%	1.7%	1.1%	2.4%
Other	2.3%	8.5%	0.4%	3.0%	7.3%	1.0%	2.4%	9.6%	5.0%	0.0%	3.9%	5.3%	2.5%	5.5%
DK	4.1%	7.6%	0.7%	4.8%	0.5%	3.2%	2.5%	2.9%	0.7%	0.0%	2.9%	1.2%	1.7%	2.3%
Missing	0.2%	0.4%	0.1%	2.4%	0.0%	0.1%	0.1%	0.2%	1.0%	0.0%	0.3%	0.5%	0.5%	0.3%

Source: Demographic Health Surveys (2005); www.measuredhs.com.