

XX.

The ICPD Programme of Action addresses a wide range of issues that bear on poverty reduction. The Programme focuses on the effects of fertility decline associated with improved access to reproductive health services and child mortality declines in high fertility countries. Research on the demographic dividend, shown in

TAB XX.1. POVERTY AND DEMOGRAPHIC INDICATORS 1990-2002

	Percentage of population in poverty		Poverty gap (percentage)	
	<10	> 10	<5	>5
Number of countries.....	45	49	59	35
Total fertility .....	2.3	4.6	2.7	4.8
Percentage of population under 15 .....	27.9	41.3	30.5	42.2

Source: World Development Indicators 2004.

NOTE: Poverty is the percentage of the population living on less than \$US 1 a day. Values presented are averages of estimates available for 1990-2002.

The correlation between demographic and poverty variables apparent in table XX.1 cannot be taken as evidence of a causal relationship, that is, reducing total fertility does not necessarily cause a reduction of poverty. There are many other factors at play and high fertility may be, in part, an outcome of poverty. The important conclusion to be drawn from table XX.1 is that implementing more effective reproductive health programmes in high fertility countries will target countries where poverty is greatest. The question at hand is whether fertility reduction is an effective measure for reducing poverty.

There are many important and contentious issues related to the number of children and poverty. Many studies have shown that incomes are lower in larger families, but as with the data displayed in table

XX.1, issues of causality make it difficult to interpret this correlation. We also know that a variety of behavioural responses mediate the financial impact of an event such as the birth of a child. Other household members may work harder, family members may help with time or financial resources, and public support may reduce the financial impact of an additional birth. Education and health may be

and Schmidt, 1995; 2001; and Bloom and Williamson, 1998). Direct estimates have been constructed by combining population data with estimates of age-profiles of consumption and production obtained by analyzing data at the micro-level (Cutler and others, 1990; Mason and Lee, 2004). The evidence assembled to date indicates that these two methods are statistically equivalent (Kelley and Schmidt, 2001).

The direct method has been used by Mason and Lee (2004) to estimate the demographic dividend for all countries in the world using United Nations population data (United Nations, 2000) and a standard age-profile of consumption and productivity. Thus, variation in the demographic dividend among regions and over time is related entirely to demographic variation among countries rather than differences in the age-profiles of production and consumption. Not captured by the calculations are differences in policy, institutions, or other contextual variables that influence the success with which countries exploit the opportunities created by changing age structure.

Briefly stated the analysis indicates that during the last four decades the countries of Asia and Latin America have been the main beneficiaries of the demographic dividend. Neither the least developed countries nor the countries of Africa have as yet experienced favourable demographic conditions. These differences among regions are a direct reflection of the persistence of high fertility in many of the least developed countries and in countries of sub-Saharan Africa. However, if the projected fertility declines in those regions become a reality, the demographic dividend is expected to become increasingly important in both regions during the next decades.

The results presented in table XX.2 provide crude estimates of the effect of the demographic dividend on the proportion of the population living with less than \$US 1 per day assuming that: (a) economic growth due to fertility decline is as effective at reducing poverty as other growth policies; and (

2015. For the least developed countries, demographic change had an adverse effect on poverty between 1960 and 2000, but between 2000 and 2015 that effect is expected to be favourable, provided fertility declines, leading to an estimated reduction in poverty of 12 per cent. The demographic effects on poverty at the level of major world regions mirror the difference in experience of less developed versus least developed countries. Demographic change did not facilitate poverty reduction in Africa between 1960 and 2000, but had very favourable effects in Asia and Latin America and the Caribbean, reducing poverty by 16.2 per cent and 19.5 per cent, respectively. During 2000-2015, however, significant reductions in poverty are anticipated in all three regions due to favourable changes in the age structure related to continued reductions of fertility.

The calculations presented in table XX.2 provide a general indication of the magnitude of the effects associated with population change and show that, for the first time, demographic conditions could be favourable throughout the developing world during the next 15 years. There are important issues, however, that are not addressed by this approach. One is that the effect of economic growth on poverty varies from region to region and from country to country or even within countries. This issue has been explored in a number of studies, with the conclusion that initial conditions matter. Poverty is more responsive to economic growth where initial income inequality is lower (Ravallion, 2004) and educational attainment is higher (Ravallion and Datt, 1999). Consistent with these observations are empirical estimates of the elasticities of poverty to income inequality and educational attainment that are somewhat higher in Asia—where income inequality has been lower and educational attainment is generally higher than elsewhere. This finding suggests that the effects shown in table XX.2 may be under-estimated for Asia and over-estimated for Latin America and the Caribbean and for Africa. A second unresolved issue is whether fertility reduction is more or less effective in reducing poverty than development is. This issue is explored in the next section.

C. A MICRO-LEVEL PERSPECTIVE: FERTILITY AND POVERTY  
 number of children in population relative to number of persons in household  
 reduced fertility in the developing world. A fall in fertility (from 6.2 to 5.0) would reduce the number of children in population relative to the number of persons in household by 1.153.

We use a quasi-experimental approach to estimate the net direct effect of fertility decline on poverty. Using data from a household survey, we classify households with per capita expenditure of less than a dollar a day as impoverished. The poverty line is 911 *Rupiah* in 1996, calculated using the official exchange rate (2,342 *Rupiah* per dollar) and a PPP conversion factor to adjust the official exchange rate of 0.3889 per dollar.<sup>4</sup> Then, we randomly select 10 per cent of the children aged 0-14. We recalculate per capita household consumption and poverty levels excluding those children from the survey, reducing total household consumption by the income of the excluded children. The experiment is repeated for sub-groups of the population: (*a*

occur in households with educated female heads, but the original level of poverty for this group is quite low. When we carried this type of experimental estimation using data from the 2002 *Susenas*, we found that the results and patterns obtained were similar to those derived from 1996 data.

In sum, both the macro- and the micro-level analyses support a single conclusion: in high fertility societies, fertility reduction is a potentially powerful tool for reducing poverty.

TABLE XX.3. CHANGE IN THE PERCENTAGE OF POPULATION IN POVERTY ASSOCIATED WITH A 10 PER CENT DECLINE IN THE NUMBER OF CHILDREN, INDONESIA, 1996

		<i>Before</i>	<i>After</i>	<i>Change</i>	<i>Percentage change</i>
Total	All HH	8.09	7.19	-0.90	-11.12
	Female HH	9.50	6.49	-3.01	-31.68
By residence					
Urban	All HH	2.52	1.70	-0.82	-32.54
	Female HH	2.78	1.62	-1.16	-41.73
Rural	All HH	14.79	12.06	-2.73	-18.46
	Female HH	15.01	9.60	-5.41	-36.04
By education of household head					
Junior high or less	All HH	9.78	7.12	-2.66	-27.20
	Female HH	9.51	6.45	-3.06	-32.18
More than junior high	All HH	1.15	1.00	-0.15	-13.04
	Female HH	0.91	0.48	-0.43	-47.25

*Source:* Calculated from the 1996 *Susenas*.

#### NOTES

<sup>1</sup> Several recent reviews treat these issues extensively (Ahlburg, Kelley and others, 1996; Eastwood and Lipton 2001a; Merrick 2001).

<sup>2</sup> That children impose a financial cost does not imply that their birth reduces the welfare of parents or other family members. Children are valued for reasons other than being future workers.

<sup>3</sup> A growth spell refers to a period for which comparable income and expenditure or poverty surveys can be used to measure economic growth and poverty or a period of three or more years.

<sup>4</sup> The poverty rate is slightly higher than in the figure and in table 3 because we use the 1996 PPP measure which is somewhat higher than the 1993 PPP measure used by the World Bank.

## REFERENCES

Ahlburg, Dennis A. (1996). The effects of rapid population growth on poverty in developing countries. In *The Impacts of Population Growth on Well-being in Developing Countries*, D. A. Ahlburg, A. C. Kelley and K.