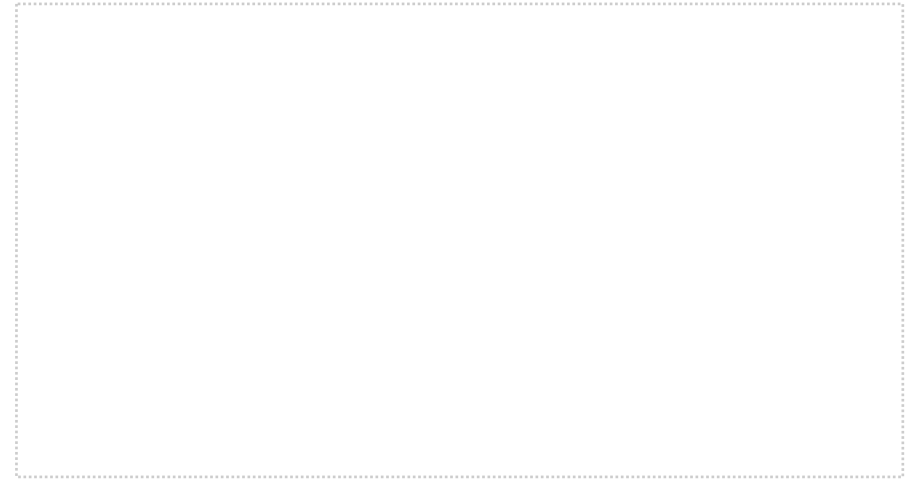**University of San Carlos**

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Fertility and Age-Structural Transitions and the Millennium Development Goals: Perspective from the Philippines

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Abstract

This paper demonstrates the link between fertility transition and the achievement of millennium development goals (MDGs) from the perspective of the age-structural transition. The decline of birth and death rates sets into motion the demographic transition, which in turn brings about population aging or the age-structural transition. Fertility decline is the primary driver of population aging.

The transition from a young to an old population means that, consecutively in time, a country experiences the preponderance of people in certain age groups, i.e., beginning with children, followed by the youth, the middle-aged, and eventually the elderly. The dominance of particular age groups at particular points in time creates pressures and opportunities pertinent to specific life course stages that are crucial to development and the realization of MDGs. Using the Philippine experience, and drawing data from the census and other secondary sources, this paper elaborates on the interactions between fertility, age-structure and the MDGs. It is descriptive in design, and theoretical rather than statistical in approach.
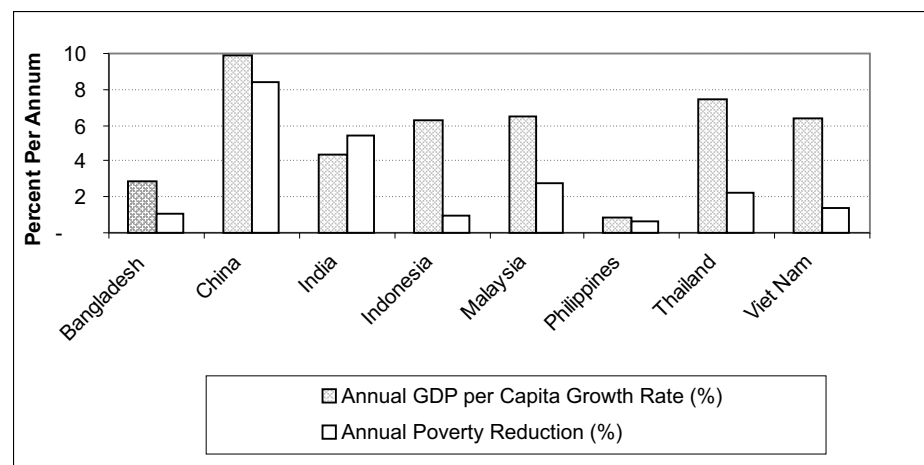
The perspective of age-structural transition as mediating link between fertility transition and the MDGs has valuable policy implications. It allows governments to plan and evaluate programs on the basis of their responsiveness to the changing needs and capabilities of the population from the standpoint of gender and the life course. In the Philippines, fertility decline has been slow, and although the proportions of children and adolescents are declining, their numbers continue to rise, especially in the poorer segment of society. Consequently, the country has difficulty in meeting the dietary, educational and reproductive health needs of its population (MDG numbers 1, 2 and 5). It also has a problem providing jobs and adequate income for its growing number of young and older adults. The Philippines faces the dual challenge of providing for a larger population-in-need and not having adequate resources to do so. Yet it is recognized that the same MDGs that the country is having difficulty in achieving are actually prerequisites for its development. It is imperative, therefore, that institutional reforms compensate for existing deficiencies, and that the global community extends its genuine support and cooperation. In effect, MDG number 8 is paramount among young, transitioning populations.

Figure 1. Population pyramids: UN medium series projection, 1995, 2015, and 2050
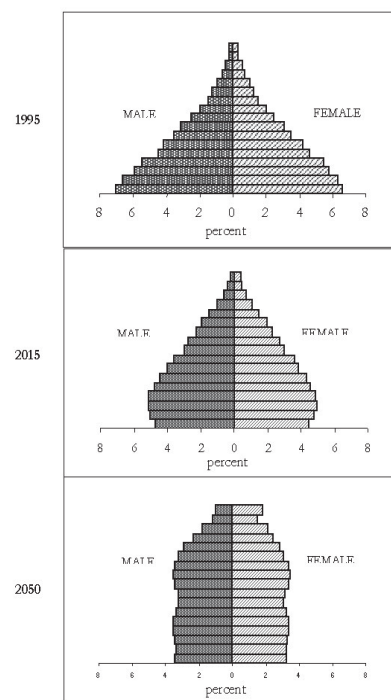
Source: Gultiano and Xenos, 2005: Figure 3

Figure 2. GDP per Capita Growth Rate and Poverty Reduction, Early to Late 1990s

Source: Pernia and Salas, 2005: Figure 4

Fertility and Age-Structural Transitions and the Millennium Development Goals: Perspective from the Philippines*

Socorro A. Gultiano[1]

I. INTRODUCTION

Most countries in Asia are still in the intermediate stage of the demographic transition. According to the Population Reference Bureau (2005), only four of 18 countries in Western Asia, three of the 14 countries in South Central Asia, and two of the 11 Southeast Asian countries have achieved replacement or below replacement level fertility. East Asia, however, has completed the demographic transition; all its countries, except Mongolia, now have below replacement level fertility.

At the regional level, Asia is similar to Latin America in that it lags behind the developed countries of Europe, North America and Oceania in fertility transition but is more advanced compared to most countries in Africa. With respect to mortality, improvements in life expectancy follow similar regional patterns, as do infant mortality rates, which are an important consideration in the millennium development goals (MDGs).

An inevitable consequence of the demographic transition is the age-structural transition. Fertility and mortality declines lead to population aging. Whether a population ages quickly or gradually is likewise dependent on the pace of fertility and mortality transitions. It is generally accepted, however, that fertility is the more potent force in population aging and the tempo with which this occurs (Kinsella and Phillips, 2005).[2] Countries experiencing dramatic reductions in fertility can expect to age faster than those undergoing gradual fertility decline.[3]

As stated, most countries in Asia are still in the process of completing the demographic transition. Their age-structures reflect this transition. Thus, close to 30 percent

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[2] The influence of mortality on age structure may prove significant in countries beset by pandemics like HIV/AIDS. Migration is also potentially important in small countries and at the subnational level.
[3] Although outside the scope of this paper, it is worth mentioning that another feature of the age-structural transition and fertility link is that drastic decline in fertility causes conspicuous disturbances in age-structures ("disordered cohort effects" as explained in, e.g., Pool (2000, 2004) which are caused primarily by pronounced primary and secondary momentum or echo effects). Gradual fertility decline, on the other hand, brings about a smooth, less perturbed age-structural transition.

of Asia's population is below 15 years of age, while only six percent is 65 years old and older. The regions with lower fertility (East and Southeast Asia) have relatively fewer children (21 and 30 percent, respectively) compared with those of higher fertility (36 percent for South Central Asia and 34 percent for Western Asia). Because of their comparable fertility levels, Asia and Latin America also have similar proportions of children and the elderly. Africa has the youngest population in the world (42 percent under 15 years old and only three percent 65 years and older), while Europe has the oldest (16 percent of children as well as the elderly). The populations of North America and Oceania are younger than that of Europe, but older than those of Asia and Latin America.

The changing age-structure of a country is an important consideration in the achievement of the millennium development goals. Fertility, by itself, has significant implications on MDG because it has immediate links with maternal and child health and has a direct impact on population growth. But fertility also impacts on MDG through the intervening process of age-structural change. Figuratively, fertility decline defines the contour of the aging process of a population (as illustrated in the population pyramid), but it is this contour that sets limits as well as expands opportunities for the realization of MDGs.

As a population ages consequent to fertility decline, "a 'boom' generation – a generation that is larger than those immediately before and after it" – will be gradually working its way through a country's age structure (Bloom, Canning and Sevilla, 2003: xii). This means that, over the years, this dominant birth cohort (born at the time when fertility was at its peak) will be passing from childhood to adolescence, to young and middle adulthood, before reaching old age. At each stage, the cohort brings to the fore the needs and capabilities apropos to the life stage it is undergoing. In more concrete terms, when the 'boom' cohort is under 15 years of age (at the early stages of fertility decline), the country will then need to intensify programs and services that cater to children's welfare and development. This relates particularly to the provision of primary education, childcare, nutrition and health services – all major concerns of MDG. In time, this large cohort of children will become adolescents and young adults. A population dominated by the youth will need to expand services for secondary and tertiary education, reproductive health care, and employment opportunities – concerns that address gender, poverty and reproductive health issues in the MDGs. When the youths advance to the middle ages, the pressure shifts to the provision of housing, job security, investment opportunities, physical and psychosocial well-being, among others. Finally, when the dominant cohort reaches old age, then the care and welfare of the elderly take precedence. At the micro level, the age-structural transition is mirrored in the preponderance of households at varying stages of the family life cycle. Insofar as MDGs are concerned, it will certainly matter whether a population has proportionately more (or less) households with: 1) young children, 2) adolescents and young adults, 3) older adults, and 4) the elderly. Consumption, productivity, savings and investment patterns are greatly influenced

Table 4. Pearson correlation coefficients between demographic and MDG indicators

Pair of indicators	Coefficient*
TFR in 1990 and	
% of families with working children 5-17 years old	0.3423
Proportion of population age 30-59 in 1995 and	
% of families with working children 5-17 years old	-0.3322
Median age in 1995 and	
% of children 0-5 years old who are underweight	-0.2768
Median age in 1995 and	
% of children 0-5 years old who are stunted	-0.6022
Median age in 1995 and	
% of couples practicing family planning	0.2541

* significant at p<0.05

Table 3. Millennium Development Goals: Rate of Progress

MDG	Probability of Attaining Target*
Eradicate extreme poverty and hunger	
Proportion of population below	
- subsistence (food) threshold	HIGH
- poverty threshold	HIGH
Proportion of population below	
- subsistence (food) threshold	HIGH
- poverty threshold	HIGH
Prevalence of malnutrition among 0-5 year-old children	
(% underweight) – based on international ref. std.	MEDIUM
Proportion of households with per capita intake below	
100% dietary energy requirement	HIGH
Achieve universal primary education	
Elementary participation rate	MEDIUM
Elementary cohort survival rate	LOW
Promote gender equality and empower women	
Ratio of girls to 100 boys in	
- elementary education	HIGH
- secondary education	HIGH
Reduce child mortality	
Under 5 mortality rate	HIGH
Infant mortality rate	HIGH
Improve maternal health	
Maternal mortality rate	MEDIUM
Increase access to reproductive health services	
Prevalence of men and women / couples	
practicing responsible parenthood	MEDIUM
HIV prevalence	HIGH
Halt and begin to reverse the incidence of	
malaria and other diseases	
Malaria morbidity rate (per 100,000)	HIGH
Provide basic amenities	
Proportion of families with access to	
Safe drinking water	HIGH

* The criterion used in determining whether the target will be met is the ratio between the annual rate of change needed to reach the target and the current rate of progress. The ratings correspond to ranges of rate as follows: <1.5 = high, 1.5-2.0 = medium, >2.0 low.
Source: United Nations and the Republic of the Philippines, 2005. *Second Philippines Progress Report on the Millennium Development Goals. Table 1, p. 28.*

by the age composition of households. Each of these stages has special implications on the goals of poverty alleviation, universal education, maternal and child health and environmental protection because they relate in specific ways to the dynamics and composition of families and households. The goals and targets of MDG clearly have age and gender dimensions; therefore, there is a need to integrate age-structural considerations in the planning, implementation and monitoring of MDG programs.

Another aspect of the age-structural transition that is crucial to the MDGs is its link with development, because development is closely intertwined with the MDGs. This three-way connection is best illustrated in the concept of the "demographic bonus". A young population has a high child dependency burden, while an old population has many old-age dependents. Therefore, during the early and final stages of the age-structural transition, economic development can stall because the country's resources are focused on social services and welfare programs for children and old people, respectively, rather than on productive investments. During the intermediate stage of the age-structural transition, however, the population enjoys a respite from high dependency burdens when the working-age population outnumbers the children and the elderly. The predominance of people in the productive ages constitutes a "demographic bonus/dividend" or "window of opportunity" for the population to experience rapid economic growth. There is a caveat to this, however. The economic benefits of the demographic bonus can only be realized if the working-age population is fully productive because adequate human capital investments on health and education, plus a growth-facilitating policy environment are in place. If this is so, then substantial income growth, both at the macro and micro levels, can be achieved.

The development and age-structure scenarios just described link with MDGs in two ways. First, all things being equal, the achievement of MDGs (or lack thereof) is viewed as a by-product of economic growth that is being accelerated (or constrained) by a country's age-structure. In specific terms, slow economic growth during times of high dependency burdens will impede the achievement of MDGs because a country will not have sufficient resources to mobilize MDG programs. Conversely, rapid economic growth fueled by a favorable age structure can fast track the achievement of MDGs. Second, the achievement of MDGs is regarded as a facilitating factor for economic growth because it ensures a healthy, educated and empowered working-age population when the demographic "window of opportunity" presents itself. What all this implies is that, in order to avoid the negative cycle of high dependency burden, low economic growth, failure to achieve MDGs and avail of benefits from the demographic bonus, it is imperative that MDGs be attained during the early stages of the age-structural transition. In doing so, a healthy, educated working population can be guaranteed for the intermediate and advanced stages of age-structural change. This imperative, however, will prove to be a challenge to a "young" population whose economic performance is faltering. In such cases, institutional factors such as good governance, policies,

private-public sector partnerships, and global cooperation (all MDG concerns as well) must play more significant roles.

In the following pages, concrete illustrations of the relationships between fertility, age-structure, development and the MDGs will be presented with the Philippines as case study.

II. OBJECTIVES

It is therefore the purpose of this paper to demonstrate, from Philippine experience, the link between fertility transition and the achievement of MDGs via the intervening influence of the age-structural transition. In specific terms, the paper will expound on the relationships between:

1) fertility decline and the age-structural transition,
2) age-structural transition and development,
3) age-structural transition and MDGs, and
4) MDGs and development.

It will further explain that these linkages have significant implications on policies that are relevant to the achievement of MDGs.

III. MATERIALS AND METHODS

The Philippines provides the case study for exploring the relationships between fertility, age-structure and the MDGs. Philippine data are obtained from the census and secondary sources such as the 2003 National Demographic and Health Survey (National Statistics Office and ORC Macro, 2004) and the Second Philippines Progress Report on the Millennium Development Goals (United Nations and the Republic of the Philippines, 2005). Where disaggregated data at the provincial and regional levels are accessible, simple correlations of pertinent indicators are presented. Cross-country and inter-regional comparisons are provided to the extent that these are available in the 2005 World Population Data Sheet of the Population Reference Bureau.

Because of data and resource constraints, a thorough statistical analysis is not possible in this study. Arguments are made and conclusions reached largely from a theoretical rather than an empirical standpoint. Speculations put forth are informed, as well as limited, by the data at hand.

Table 1. Population by major age groups: Philippines 1970-2020 (medium series)

Age group	1970[a]	1980[a]	1990[a]	2000[b]	2010[b]	2015[b]	2020[b]	2025[b]	2030[b]
				in thousand					
0-14	16,757	20,221	23,994	28,546	30,731	32,115	33,194	33,632	33,487
15-29	9,691	13,698	17,354	21,245	26,377	28,043	29,243	30,336	31,754
30-59	8,560	11,637	16,023	22,566	30,209	34,436	38,852	43,328	47,265
60+	1,646	2,542	3,188	4,589	6,622	8,228	10,261	12,583	15,153
All ages	36,684[c]	48,098	60,559	76,946	93,939	102,822	111,550	119,879	127,659
				in percent					
0-14	45.7	42.0	39.6	37.1	32.7	31.2	29.8	28.1	26.2
15-29	26.4	28.5	28.7	27.6	28.1	27.3	26.2	25.3	24.9
30-59	23.4	24.2	26.4	29.3	32.2	33.5	34.8	36.1	37.0
60+	4.5	5.3	5.3	6.0	7.0	8.0	9.2	10.5	11.9

a. Census of Population and Housing, 1970, 1980, 1990
b. National Statistical Coordinating Board (NSCB) website, 2005.
c. Includes about 30,000 individuals with ages unknown

Table 2. Population by major age groups: Philippines 1970-2020 (low series)

Age group	1970[a]	1980[a]	1990[a]	2000[b]	2010[b]	2015[b]	2020[b]	2025	2030
				in thousand					
0-14	16,757	20,221	23,994	26,785	24,669	23,589	23,130	23,093	22,839
15-29	9,691	13,698	17,354	21,425	25,724	26,426	25,991	24,422	23,380
30-59	8,560	11,637	16,023	22,678	30,489	34,706	38,994	43,256	46,188
60+	1,646	2,542	3,188	4,617	7,058	8,719	10,749	13,101	15,792
All ages	36,684[c]	48,098	60,559	75,505	87,940	93,440	98,864	103,872	108,199
				in percent					
0-14	45.7	42.0	39.6	35.5	28.0	25.2	23.4	22.2	21.1
15-29	26.4	28.5	28.7	28.4	29.3	28.3	26.3	23.5	21.6
30-59	23.4	24.2	26.4	30.0	34.7	37.1	39.4	41.7	42.7
60+	4.5	5.3	5.3	6.1	8.0	9.3	10.9	12.6	14.6

a. Census of Population and Housing, 1970, 1980, 1990.
b. National Statistics Office (NSO), 1997, Vol. I, Table 6, p.58.
c. Includes about 30,000 individuals with ages unknown.

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IV. THE PHILIPPINE EXPERIENCE

The Philippines' fertility and age-structural transitions

In the 2000 census, the Philippines was reported to have a population of 76.5 million. Today it is estimated to have 85.2 million people. Currently, the Philippines is the 12th largest country in the world. In Asia, it ranks 7th after China, India, Indonesia, Pakistan, Bangladesh and Japan. By 2050, it may well be the 11th largest country in the world, and will displace Japan as the 6th largest in Asia (PRB, 2005).

The 2000 census also pegged the annual growth rate of the Philippines at 2.3 percent. By 2015, this growth rate is expected to go down to 1.8 percent (NSCB, 2005). Growth rates remain relatively high because fertility rates have been slow to decline. This is so because population programs have been sporadic and inconsistent owing to the persistent opposition of the Catholic Church hierarchy to the government's adoption of a clear and unequivocal population policy (Herrin, 2003). Between 1970 and 1996, the total fertility rate of the Philippines decreased from 5.97 to 3.73 births. However, significant declines observed in the decades of the 70s and 80s were not sustained thereafter. The 2003 National Demographic and Health Survey (National Statistics Office and ORC Macro, 2004) reported TFR at 3.5 births. The latest projections from the National Statistics Office based on medium series assumption estimate that TFR will reach replacement level (2.07 births) only in 2035-2040 (NSCB, 2005). With this trend, the demographic transition of the Philippines is expected to be one of the slowest in Asia (Xenos, 2004).[1]

Consistent with the sluggish decline in fertility, the structural aging of the Philippine population has likewise been slow.[2] In 1990, the median age of the population was 19.7; in 2000 it was 21.0 years; by 2015, it is projected to rise to 26.5 years. Population pyramids drawn from the United Nation's medium variant projections for 1995, 2015 and 2050 provide an illustration of the gradual aging of the Philippine population (Figure 1).

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[4] Xenos estimated that, from the onset of its fertility decline in 1963, it will take the Philippines 66 years to attain replacement level fertility. Other Asian countries such as Singapore, Thailand, Pakistan and India are estimated to complete the demographic transition in 16, 32, 40, and 47 years, respectively.

[5] As far as mortality decline in the Philippines is concerned, life expectancy at birth for men increased from 51.0 years in 1960 to 62.2 years in 1990; for women it increased from 54.5 years to 67.4 years in 1990 (Flieger, Abenoja and Lim, 1981; Flieger and Cabigon, 1994). These numbers are projected to rise to 67.6 years for men and 73.1 years for women in 2015 (NSCB, 2005).

[6] The figures presented in Table 1 for 1970 to 1990 are based on actual counts from the censuses of 1970, 1980 and 1990; the 2000 figures are corrected figures based on the 2000 census, while the 2010 to 2030 figures are based on the medium series projections estimated from the 2000 figures.

Table 1 presents the distribution of the Philippine population by broad age categories. It highlights the following features of the country's age-structural change from 1970 to 2030:

(1) the proportion of people under age 15 is declining, but absolute numbers continue to rise until 2025, when a reversal becomes imminent thereafter;

(2) the number of elderly people (aged 60 and above) more than doubled since 1970; from hereon, it could triple in the next three decades; but its proportion will not reach the 10% mark before 2025;

(3) the proportion of youths (aged 15-29) has reached its peak and will gradually decline from 2010 onwards, even as their numbers continue to rise until 2030; and

(4) older adults (aged 30-59) continue to increase in number and proportion; they will constitute the biggest segment of the population 10 years from now.

The age distributions for 2010 to 2030 given in Table 1 are taken from the medium series projections of the Philippine National Statistics Office (NSO) based on the results of the 2000 census. Earlier, the NSO prepared similar projections based on the 1995 census, and published population estimates using assumptions of rapid (low series), moderate (medium series) and slow (high series) pace of fertility decline (NSO, 1997). The low series assumed that replacement level fertility (NRR=1) would be achieved in 2010. Although unrealistic under present conditions, the 1995 low series estimates are presented in Table 2 to illustrate, in measurable terms, the impact of the tempo of fertility decline on the Philippine age-structure.

If the Philippines were to achieve replacement fertility in 2010 instead of circa 2030 as currently projected, the country's population would be smaller by 19 million in 2030. With an average household size of five members, this 19 million translates to an additional 3.8 million households. With respect to age-structural change, the aging of the Philippine population would have been more pronounced. At present, it is expected that by 2030: one-fourth of the population will be under 15 years of age; another one-fourth will be 15-29 years old; about one-third will be aged 30-59; and about one-tenth will be 60 years old and over. These proportions would be quite different if fertility had declined more steeply. By 2030: only one-fifth of the population would be under age 15; another one-fifth would be 15-29; more than two-fifths (43%) would be in the prime working ages 30-59; and 15% would be 60 years old and older. The timing of age-structural shifts would also have been different. For example, the diminishing trend in the number of children would have been evident before 2010 instead of 2030; the number of youths would begin to decline after 2015 instead of continuing on its upward trend up to 2030;

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the proportion of middle-aged adults will exceed one-third of total population before 2010 instead of 2015; and the proportion of the elderly will reach 10% in 2020 instead of 2025. Because of the protracted fertility transition in the country, the Philippines will have to confront considerably larger numbers (and proportions) of children who, eventually, will be advancing to adolescence and young adulthood in the next three decades. This demographic development is one that requires attention when probing into economic growth and MDG prospects for the country.

Another important angle to consider in fertility transition is that the pace of fertility decline is not uniform across different sectors of society. Fertility remains at relatively high levels in rural areas, and among the less educated and poorer segments of Philippine society (National Statistics Office and ORC Macro, 2004).[7] What this means, therefore, is that the large number of children that the country now has – the same children who will soon become adolescents and young adults – is heavily weighted towards the poor and the less educated. A question that deserves to be asked then is: Will this social and economic disadvantage be allowed to persist until these children reach mid and late adulthood? What can be done (or is being done) to break the cycle of high fertility and poverty? To these questions, the millennium development goals hold the key, as will be discussed in the succeeding sections.

Philippine age-structure and development

It is common knowledge that the Philippines' economic performance has not been at par with many of its Asian neighbors (Figure 2). Many factors contribute to this poor performance, including political turmoil, natural disasters, the Asian economic crisis and overall global economic slowdown (National Statistics Office, 2002; United Nations and the Republic of the Philippines, 2005). Economists hasten to add institutional factors and the poor investment climate in the country as contributing factors (Pernia and Salas, 2005). In academic circles, there is also the consensus that high fertility and unrestrained population growth have contributed to the country's weak economic performance.

A study of 80 developing and developed countries by Mapa and Balisacan (2004), cited in the white paper on "Population and Poverty: The Real Score" of the University of the Philippines School of Economics (2004, p.4), showed that: 1) "total population growth exerts a negative and significant effect on economic growth (unfavorable saving and capital-shallowing effects)", and 2) "working-age population growth (implying demographic dividend), life expectancy at birth (a health indicator), openness to trade, and quality of public

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[7] The 2003 National Demographic and Health Survey reports TFR to be: (1) 4.3 births in rural areas and 3.0 births in urban areas, (2) 5.3, 5.0, 3.5 and 2.7 births for women with no education, elementary, high school and college education, respectively, and 3) 5.9 births for the lowest wealth index quintile, in contrast to 2.0 births for the highest wealth quintile.

institutions (denoting good governance) all show positive and significant effects on economic growth." In the case of the Philippines, the paper proceeds to explain that the negative effect of population growth "operates via reduced child care and human capital investment at the family level, lower household sector savings for business and government investments, and constraints on allocative efficiency, innovation and entrepreneurship. Population growth requires capital widening to maintain the amount of capital per worker, and the faster such growth the lesser the chances of capital deepening for raising the amount of capital per worker."

Implicit in these arguments is the fact that, with the preponderance of children, the age-structure of the Philippines imposes constraints on productive investments because national and household savings are being diminished by large financial outlays for human capital investments on child health, nutrition and education. And since the number of children is continuously growing, provisions for human capital investment will, in time, become inadequate as well. Further, as large cohorts of children reach adolescence and the working ages – as is happening in the present decade – increased pressure on public and private sector employment will ensue. But since savings and productive investments had been greatly reduced, job creation will not be able to cope with demand. In consequence, surplus labor and deficits in human capital investments will render the young adult population less productive.[8]

Economists therefore contend that if high fertility and the unfavorable policy environment persist, the Philippines will miss out on the demographic bonus entirely (Herrin, 2003; Pernia, 2003; and Orbeta, 2002). The exceedingly slow passage through the demographic transition keeps dependency ratios high despite the fact that the country is currently experiencing a youth surge (Gultiano and Xenos, 2005).[9] Unless deficiencies in population and economic policies are promptly and adequately addressed, the "bonus" is not likely to materialize. Ongoing shifts in age structure already pose the immediate and continuing challenge of generating adequate job opportunities, resources and services to an unprecedented number of people in the productive ages, a challenge that the Philippines is ill-equipped to manage because it is presently caught in what is called a low-level equilibrium trap (Pernia 2003).[1] Government statistics show that the unemployment rate was 11% in October 2004 and underemployment was even higher (17%), despite 3.2 million jobs purportedly generated in 2001 to 2004 (United Nations and the Republic of the Philippines, 2005)

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[8] These arguments are based on the earlier works of Coale and Hoover (1958) and Coale (1969), a succinct description of which was provided by Herrin (1983) in aid of Philippine policy and program planning.

[9] As shown in Table 1, the Philippine is currently experiencing a "youth bulge." Had fertility declined at a faster rate to effect a more dramatic reduction in child dependency burden, this youth surge would have ushered in the "demographic bonus." From the perspective of the age-structural transition, these youths will soon be advancing to the older working ages (30-59), that period in the life course when individuals are suppose to be most productive and personal savings are highest, provided economic conditions in the country are right and full employment has been achieved (Bloom et al., 2003).

sustained economic growth and durable poverty reduction. As a result, MDG programs are faced with the dual challenge of having to reach a larger population-in-need, and without the adequate financial resources to do so. Ironically, it is precisely the achievement of MDGs that holds the promise of breaking the country's cycle of high fertility, weak economic growth, and poverty. Furthermore, with the aging of the population, it becomes crucial that MDG targets are met for the country to take advantage of the demographic "window of opportunity" thereby reaping the demographic dividend.

The Philippine experience is not unique in Asia (or the rest of the world) even if its fertility and age-structural transition has been slow in comparison with other developing countries. It remains true that many of its Asian neighbors are also transitioning from a young to an old population. With the exception of the resource and oil-rich countries in Asia, many nations are also economically challenged. The achievement of millennium development goals becomes even more important for these transitioning populations. However, their governments must realize that there is no easy way of meeting the MDG targets with its present demographic and economic conditions. It will require considerable political will and fortitude on their part. Equally important is the recognition by the global community that their cooperation is needed in this endeavor, and that such recognition must be matched with appropriate action.

provinces. The proportion of couples practicing family planning is positively correlated with the median age.

The pathways by which age structure affects MDGs are numerous. Many of these come in the form of interactions between age structure and development. As shown, a young age structure tends to inhibit economic growth because it requires that resources be channeled into education, health and nutrition of children instead of production. In investing on the young, the country would have been closer to meeting some of its MDG goals. However, these human capital investments (and the MDGs) need financing that can be guaranteed only by a robust economy. The Philippine economy is not such, partly because of its young age structure. Ironically, the Philippines' strategy for financing MDG programs stipulates that revenue generation through tax collection and savings be increased (United Nations and the Republic of the Philippines, 2005:26). There is, however, an inherent incongruence between the size of the tax-paying population (and the volume of savings it generates) and the young age structure of the country. Under these circumstances, therefore, it is important that the Philippines pursue other compensating mechanisms, such as sound policies and good governance (including fiscal reforms and related measures) and increased international assistance – themselves MDG targets – in order to advance the rest of its MDG agenda.

Despite the obstacles, it is important to recognize that the achievement of MDGs is, in itself, a prerequisite for development. Keeping in mind that the expansion of the prime working-age population is looming in the horizon, the Philippines would do well to ensure that the children and adolescents of today will grow up to be highly productive citizens of tomorrow. The MDGs, with its emphasis on enhancing human capital, managing population and alleviating poverty, is clearly a means to this end. The MDGs is a prescription for productivity, as much as it is for human welfare – and this more so for countries that are transitioning from a young to an old population, and poised in the gateway of the demographic "window of opportunity".

V. IMPLICATIONS

From the foregoing, it has been demonstrated that the achievement of the millennium development goals is influenced by a confluence of demographic, economic, institutional and other factors. This paper, however, has focused on the direct effects of the fertility transition in the realization of the MDGs, and its indirect effect through the age-structural transition.

The changing age-structure of the Philippines provided an illustration of how the achievement of MDGs can be impeded by the age composition of a population. A country with a young population and a high dependency burden is hard put to achieve rapid and

However, the Philippine situation may not be altogether dismal. Like some of its Asian neighbors, the Philippines found a pragmatic response to its existing demographic and economic condition. It is pursuing overseas employment for its burgeoning labor force with vigor. In the second quarter of 2002, close to one million overseas Filipino workers (OFWs) sent 68 billion Pesos in remittances to the home country. This amount represents an increase of 23% from the 55 billion Pesos sent a year earlier (National Statistics Office, 2005). These remittances go a long way in servicing the country's foreign debt. Thus, while Philippine economists perceive the demographic bonus as a far-fetched dream, the reality is that the country's changing age-structure has contributed, in no small way, to increasing the volume of overseas employment and, therefore, foreign remittances for the country. These remittances also bring the needed boost in human capital investments for education and health because they are essentially sent to improve the welfare of the OFWs' families. In fact, one of the Philippine strategies for financing the MDGs expressly states "(t)he tapping of the remittance of OFWs which pass through the formal banking sector to provide both direct and indirect revenues in attaining the MDGs" (United Nations and the Republic of the Philippines, 2005:26). Distorted as it is, does this not represent some kind of demographic bonus that the Philippines is probably enjoying?

The foregoing notwithstanding, overseas employment is clearly not the ideal form of a demographic bonus because productive employment takes place outside the home country. Already, despite its expanding labor force, the Philippines is experiencing manpower shortages in key areas such as health care and education – areas of high demand in other countries but also much needed in the Philippines where human capital is gradually being eroded. The Department of Health and the Department of Education are greatly alarmed by the exodus of their medical practitioners and teachers to foreign lands. Anecdotal evidence abound narrating of doctors who are now enrolled in nursing in order to facilitate their job placement abroad. As high fertility and rapid population growth continue, the exacerbation in the deterioration of human capital, plus the exodus of health and teaching professionals are

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[10] Pernia (2003:2) explains this low-level equilibrium trap as "a chain of low economic growth, high unemployment, low productivity, persistent poverty, declining human capital, and high fertility feeding back into low economic growth, high unemployment, low productivity and so on and so forth".

[11] Higgins and Williamson (1997) have shown that, especially in Asia, age-structure is related to foreign capital dependence. This dependence is high for young populations, but gradually diminishes as the population ages and is dominated by people in the prime working-ages. In the Philippines, the working population overseas is apparently helping to pay the country's accumulated debt.

bound to be a formula for national disaster. What once was the Philippine's comparative advantage in the form of an educated labor force will gradually fade away, and so will its edge in foreign employment. It bears noting that the unprecedented increase in the number (and proportion) of the Filipino working age population is yet to come. One may ask therefore: what is going to be the quality of this labor force and what will it mean to Philippine development.

Age-structure, development and the MDGs

The "Second Philippines Progress Report on the Millennium Development Goals" (United Nations and the Republic of the Philippines, 2005), paints a fairly optimistic picture of the Philippines' prospect of attaining the MDGs (Table 3). Of the 17 targets/indicators listed, 12 are reported to have "high" probabilities of attainment. Those with "medium" probability of being achieved have to do with: 1) the prevalence of malnutrition among children 0-5 years old, 2) elementary participation rate of children, 3) improvement in maternal mortality, and 4) prevalence in the use of family planning. One indicator, the elementary cohort survival rate, was rated "low" in achievement probability.

Another study by a group of economists (Collas-Monsod, Monsod and Ducanes, 2004), presents results not too different from, albeit less optimistic than, the official Philippine report. Of the ten targets that it examined, five had a "high" likelihood of being achieved, namely: 1) access to safe water, 2) elimination of gender disparities in education, 3) reducing infant and under-five mortality, 4) arresting and reversing the spread of HIH/AIDS, and 5) controlling malaria and other major diseases. Four had "low" likelihood of attainment and these include: 1) the reduction of people living in extreme poverty, 2) reducing the percentage of the population below minimum level of dietary consumption and the proportion of underweight children under five years old, 3) universal access and completion of primary education, and 4) reduction in maternal mortality. Rated "fair" was the likelihood of universal access to basic reproductive health services.

Several factors influence the country's prospects of achieving the MDGs. The study of Collas-Monsod et al. (2004), for example, reveals that geographical and political factors play important roles in meeting MDG targets. Specifically, climate, topography and land use classification, as well as history, socio-political and cultural milieus, affect the pace with which a province or geographic unit is able to meet specific goals. In line with arguments presented earlier, it should also be worthwhile to explore the dynamics of age-structure as this relates to the achievement of MDGs.

Based on the two studies mentioned above, there are specific MDG goals that the Philippines is having moderate to considerable difficulty in meeting. These goals relate to poverty alleviation and malnutrition, universal primary education, maternal mortality and access to family planning and reproductive health services. From the perspective of the fertility transition, it is not surprising that, with the persistence of high fertility, the Philippines is finding it problematic to meet these goals. Maternal mortality and reproductive health care obviously have a direct link with the rate of childbearing. More importantly, it is expected that this link would be more apparent among the poor, the less educated, and rural women who bear the brunt of early, frequent and prolonged childbearing. From the perspective of the age-structural transition, it has been explained that, even if fertility is gradually on the decline, the Philippines is still a young population dominated by children. This is one reason why universal primary education is not an easy goal to achieve. The country's resources, its physical and social infrastructure, cannot cope with the expansion of the school-age population. And since child dependency ratio remains high particularly among the poor, poverty is perpetuated and exacerbated. A natural consequence of poverty is malnutrition. To make matters worse, studies have shown (e.g., Glewwe and King, 2001; Glewwe, Jacoby and King, 2001, among others) that malnutrition has significant adverse effects on school participation and achievement among children. What is evident, therefore, is that the goals that the Philippines is finding hard to accomplish interact with one another and with the country's demographic and economic profile, making their attainment all the more difficult.

It is also important to reiterate that the Philippines is currently experiencing a youth surge. At no other time has concerns for adolescent fertility and reproductive health been more urgent. But the sheer number of youths, not to mention their propensity to migrate (Gultiano and Xenos, 2005), makes adequate provision for reproductive health care an enormous challenge. What is perhaps perplexing is that, in the Philippines there is no gender discrimination as far as education is concerned. Women in fact enjoy an advantage over men in this regard. Yet teenage girls, despite their education, show high prevalence of premarital pregnancy (National Statistics Office and ORC Macro, 2004). This is probably proof that universal access to family planning information, supplies, and reproductive health care is truly lacking in the country. This is further underscored by the fact that only 49% of married women use family planning and that 17% of currently married women have an unmet need for family planning, thus facing the risk of unwanted pregnancy.

Limited province-level data, assembled for the purpose of this paper, also help to demonstrate some of the relationships between age-structure and selected proxy indictors of MDGs. The data show that the prevalence of child labor (a proxy for limitations in school participation/performance of children, as well as income inadequacy) is positively correlated with the total fertility rate and negatively correlated with the proportion of adults in the prime working ages (Table 4). They also show that the median age of the provincial population is negatively associated with the prevalence of underweight children and stunted children in the