

Age-Structure Transition and Development in Asia and the Pacific: Opportunities and Challenges

Fertility and population growth have declined significantly in much of Asia during the past half century. Consequently, the age structure of populations is in the midst of a major transition. Countries are at different stages in this process, which is having a significant impact on their development.

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Patterns of production and consumption vary with age. Therefore, the age structure of the population should influence the development process through the

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supply of, and demand for, labour and goods and services. However, much of the debate and discussion on population and development during the past several decades has centred on the size and growth of the population. This is because the high rate of population growth that resulted from unprecedented declines in mortality leading to larger population vis-à-vis resources – after the Second World War was seen as impeding economic growth in developing countries, including those in Asia and the Pacific.

Some studies on the experience of selected countries and areas in East and South-East Asia that have recorded high rates of economic growth during the past few decades reveal that changes in age structure, occurring as a result of their demographic transition, have contributed significantly to the economic growth of these countries and areas (Bloom and Williamson, 1998; Mason, 2001). These studies also indicate that benefits afforded due to age structure change, called the “demographic dividend”, are not automatic. They will be realized only if appropriate policies and enabling conditions are in place.

Since the end of the Second World War, and with the emergence of newly independent States during the middle of the twentieth century, most countries in Asia and the Pacific have undergone an unprecedented transition in demographic behaviour, from high fertility and high mortality to low fertility and low mortality. This process has run its course in many countries, while in others it is still under way. This transition has resulted in rapid shifts in the age structure of these populations. In some countries and areas, it has led to rapid population ageing, which will have significant implications in the future for countries in Asia and the Pacific.

This paper reviews trends in population growth and the dynamics of age structure in Asia and the Pacific. It also examines likely future trends by broad subregion, as well as in selected countries. This is followed by a review of the findings of recent studies on the contribution of age structure dynamics to economic growth, and on the types of policies and enabling environment that have proved essential for benefits of the age structure transition to accrue. This paper also examines ageing, and how the benefits of a changing age structure can be harnessed to sustain economic growth and meet the inevitable increase in the resources required to fulfill the needs of older persons. It concludes with a discussion on the relevance of the findings for planning and the implications for policy so that a country can effectively utilize the opportunities afforded by the changing age structure for economic growth and sustainable development.

Population growth, age-structure transition and labour supply

Population growth and age-structure transition

The population of Asia and the Pacific was approximately 1.5 billion in 1950, according to recent estimates by the United Nations (2005).¹ By 2000 that population had increased 2.5 times to 3.7 billion. The region's population is projected to increase to 5.1 billion, or an increase of 40 per cent over the current level, by 2050 (see table 1).

Table 1. Population size, growth rate and age structure: 1950-2050

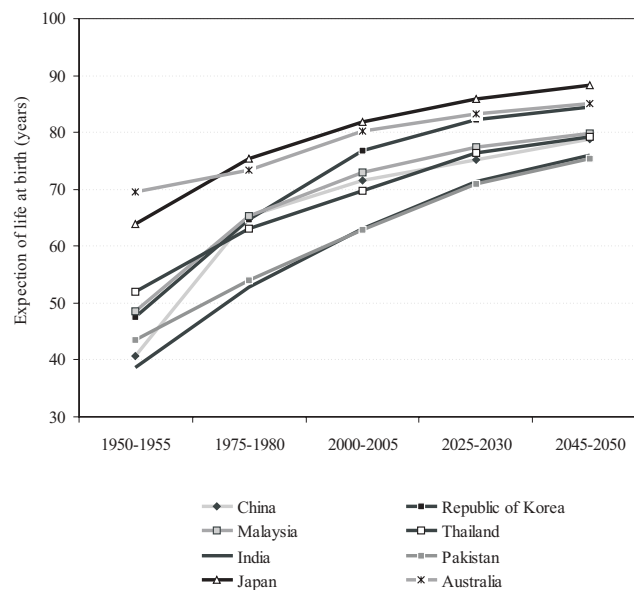
Age group (years)	1950	1975	2000	2025	2050
Population (millions)					
<15	533.8	965.7	1,103.0	1,037.5	920.4
16-64	891.9	1,425.7	2,407.3	3,168.1	3,271.9
>65	63.8	112.7	233.8	500.0	916.7
Total	1,489.6	2,504.1	3,744.1	4,705.5	5,109.0
Percentage					
<15	35.8	38.6	29.5	22.0	18.0
16-64	59.9	56.9	64.3	67.3	64.0
>65	4.3	4.5	6.2	10.6	17.9
Total	100.0	100.0	100.0	100.0	100.0
Rate of growth					
	1950-1975	1975-2000	2000-2025	2025-2050	
<15	2.4	0.5	-0.2	0.5	
16-64	1.9	2.1	1.1	0.1	
>65	2.3	2.9	3.0	2.4	
Total	2.1	1.6	0.9	0.3	

Source: United Nations (2005). *World Population Prospects: the 2004 Revision*, (United Nations publication, Sales No. E.05.XIII.5).

During this five-decade period, the population growth rate, which was very high at first, began to steadily decline – a trend that is projected to continue. For example, during the period from 1950 to 1975 the rate of population growth averaged 2.1 per cent annually for the region, as mortality rapidly declined (see figure 1), while fertility remained high in most countries. With the introduction of

national family planning programmes during the 1960s and early 1970s, fertility also registered significant declines in many countries (see figure 2), resulting in reductions in the population growth rate to 1.6 per cent per year during the period 1975-2000. With the decline in fertility expected to continue, the rate of population growth is projected to decline to almost zero by 2050.

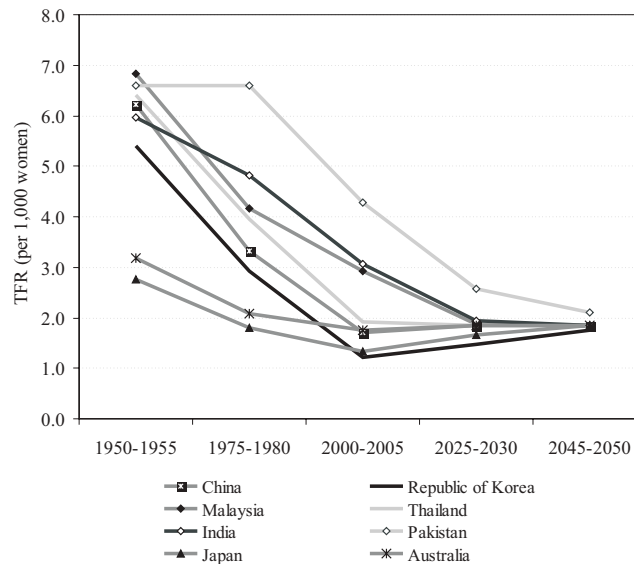
Figure 1. Trends in life expectancy at birth, selected countries



Source: United Nations (2005). *World Population Prospects: The 2004 Revision*. ST/ESA/SER.A/245, New York.

These trends are manifested in the age structure of the population and its transition from “young” to “old” in a relatively short span of time, as seen in table 1. For example, the percentage of the population younger than 15 years of age declined from around 38.6 per cent of total population in 1975 to 29.5 per cent in 2000. By 2050, this portion of the population is projected to decline to only 18 per cent of the total, while the percentage of the population aged 65 and above is expected to increase threefold, from 6 per cent of the total to 18 per cent. During this period, the percentage of the population of working age (15-64 years) will also undergo significant change, increasing rapidly at first and moderately thereafter, before beginning to decline.

Figure 2. Trends in total fertility rates, selected countries



Source: United Nations (2005), *World Population Prospects: the 2004 Revision*, ST/ESA/SER.A/245, New York.

The timing and pace of the transition, however, differed among subregions, and even more importantly, among countries. Figures 3 and 4 and table 2 illustrate the overall trends in population growth and differences among the subregions.

In general, all ESCAP subregions have experienced a decline in the rate of population growth, a trend that will continue well into the future. The two subregions that have experienced the highest rate of population growth are South and South-West Asia and South-East Asia. These subregions have recorded a threefold increase in their populations during the period 1950-2000. By 2050, the increase will be fivefold. East and North-East Asia recorded a twofold increase in its population during the same fifty-year period, and the population is projected to increase moderately for a couple of decades before declining to its 2000 level by 2050. The North and Central Asian subregion has had the lowest rates of population growth much lower than in other ESCAP subregions since the 1960s. In recent periods the rate of population growth has become negative, a trend that is expected to continue due to declining fertility and migration. The Pacific subregion

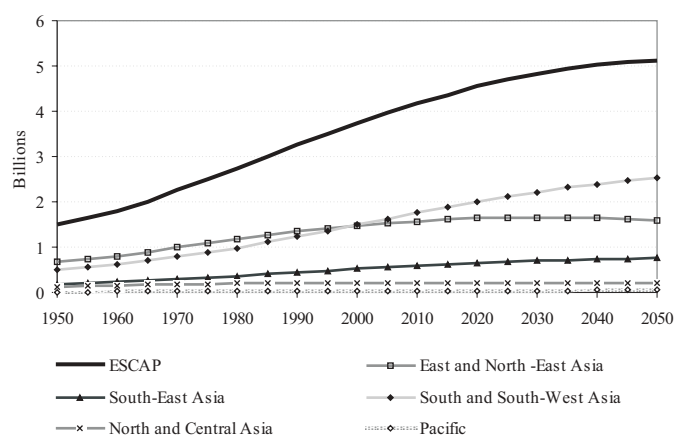
experienced moderately high rates of population growth though they have been steadily declining. This trend is expected to continue partly as a result of migration to Australia and New Zealand, and also due to consistently high fertility rates in some of the Pacific island economies. Consequently, the timing and pace of the age structure transition has been different among the subregions, as shown in table 2.

Table 2. Percentage distribution of population by broad age groups, ESCAP subregions: 1950-2050

Region/Age group	1950	1975	2000	2025	2050
East and North-East Asia					
<15	34.1	37.8	23.8	17.4	15.4
16-64	61.4	57.4	68.5	67.6	59.8
>65	4.5	4.7	7.7	15.0	24.7
Total population (millions)	671.0	1,096.7	1,479.2	1,652.0	1,586.7
South-East Asia					
<15	38.9	42.1	31.9	22.5	18.0
16-64	57.3	54.3	63.3	68.7	64.9
>65	3.8	3.6	4.8	8.8	17.1
Total population (millions)	178.1	321.3	518.9	678.3	752.3
South and South-West Asia					
<15	38.9	40.7	35.2	25.9	19.7
16-64	57.5	55.6	60.2	66.7	66.6
>65	3.6	3.8	4.6	7.4	13.7
Total population (millions)	500.1	879.9	1,497.5	2,119.3	2,520.6
North and Central Asia					
<15	29.5	27.5	23.1	18.7	17.2
16-64	64.2	64.5	66.7	67.2	63.0
>65	6.3	8.0	10.2	14.0	19.8
Total population (millions)	128.0	185.0	217.9	215.6	202.5
Pacific					
<15	28.4	31.2	26.1	21.0	17.9
16-64	64.1	61.4	64.2	64.1	62.6
>65	7.5	7.4	9.8	14.9	19.4
Total population (millions)	12.5	21.1	30.6	40.3	46.9

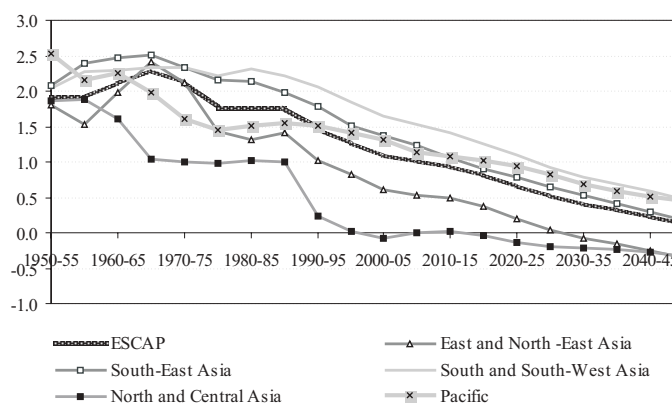
Source: United Nations (2005), *World Population Prospects: The 2004 Revision*, ST/ESA/SER.A/245, New York.

Figure 3. Trends in population growth by subregion



Source: United Nations (2005), *World Population Prospects: The 2004 Revision*, ST/ESA/SER.A/245, New York.

Figure 4. Trends in population growth rate by subregion

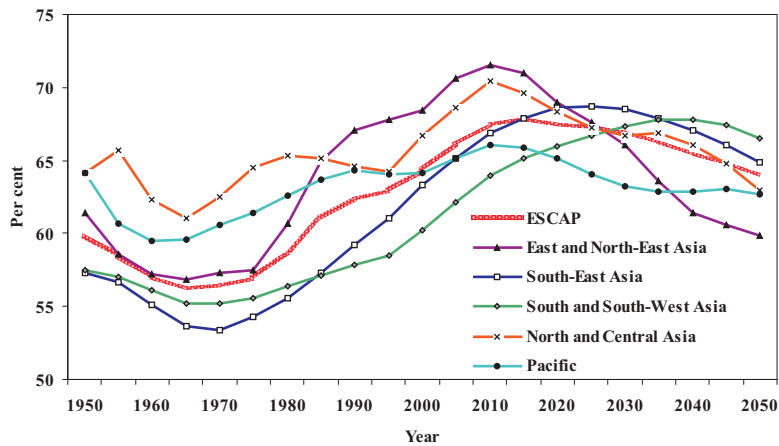


Source: United Nations (2005), *World Population Prospects: The 2004 Revision*, ST/ESA/SER.A/24, New York.

Implications for labour supply

The impact of the changes in population growth rate and the age-structure transition on the working-age population, a proxy for labour supply, can be seen in figure 5. In general since the period 1960-1970, all subregions have experienced significant increases in the percentage of the population 15-64 years of age. This increase will peak at different times in different subregions during the next three to four decades. For example, the transition has been most rapid and pronounced in East and North-East Asia, where the percentage of the population 15-64 years of age increased from about 57 per cent in 1970 to 68 per cent in 2000. It is expected to increase further, and peak at approximately 72 per cent by 2010, before declining rapidly to about 60 per cent by 2050. The transition in South-East Asia has also been rapid and pronounced, but took longer to occur. The percentage of the population 15-64 years of age increased from about 53 per cent in 1970 to 63 per cent in 2000, and is projected to increase to 69 per cent by the period 2025-2030.

Figure 5. Percentage share of population aged 15-64 by subregion



Source: United Nations (2005), *World Population Prospects: The 2004 Revision*, ST/ESA/SER.A/245, New York.

In South and South-West Asia, the percentage of the working-age population started to rise in 1970, from a low of 53 per cent. This increase remained modest until 2000, when it reached 60 per cent. The pace of this increase will accelerate up to 2025, when it is projected to reach 67 per cent. It is predicted to remain at that level until 2040, after which it will begin to decline, albeit slowly.

North and Central Asia and the Pacific subregions present a different scenario, owing to specific contextual factors that influenced the demographic trends in the countries of these subregions. In both subregions the demographic transition was under way well before 1950. As a result of lower fertility, they consequently had a higher percentage (64 per cent) of population in the working age group. However, the percentage of the population 15-64 years of age declined to about 60 per cent by 1965. This phenomenon was associated with an increase in fertility during the years immediately after the Second World War. Since then, the percentage of the population in this age group has increased steadily in both subregions; it is expected to reach its peak in 2010, before beginning to decline.

Thus, the increase in the percentage of working-age population, from its lowest level to its highest, has been greatest (15-16 points) in East and North-East Asia and in South-East Asia, where it took 45 and 55 years to occur. In South and South-West Asia, the increase is expected to be about 13 points in approximately 70 years. The increase since 1950 is more modest (9 and 7 points) in North and Central Asia and in the Pacific, where it is expected to take place during a span of 45 years. The patterns in the subregions of North and Central Asia and the Pacific, which got an earlier start in their demographic transition, also reflect the impacts of their swings in fertility and migration.

Ageing

An increase in the percentage of the old age population, defined here as 65 years and older, is the final stage in the age-structure transition. Ageing is an inevitable consequence of this demographic transition. For Asia and the Pacific, the number of older persons increased nearly 3.5 times during the period from 1950 to 2000, from 64 million to 234 million. This number is projected to reach 918 million, a nearly fourfold increase, by 2050. As a result of the decline in mortality among the older age population, its rates of growth have been high, at over 2 per cent annually during the period 1950-1975. That rate is expected to peak at 3 per cent annually during the period 2000-2025. Thus, ageing, which has been taking place at a modest rate until now, will accelerate in the coming decades. Older persons increased from 4.2 per cent of the total Asian and Pacific population in 1950 to 6.2 per cent in 2000. They are expected to increase to 17.9 per cent of the population in 2050 (see table 1).

Among the subregions, there are substantial differences in the timing and pace of the ageing process, as indicated in table 2. East and North-East Asia, where the demographic transition has been most rapid, will experience equally rapid ageing of the population, with the percentage of older persons increasing from a

modest 8 per cent of total population in 2000 to 25 per cent by 2050. Though less rapid, there will be a significant acceleration in the ageing process in South-East Asia during the period 2025-2050. In South and South-West Asia, where the population is still young, the process of population ageing will be slower, and it will therefore take longer to reach the levels attained in East and North-East Asia. The process will also be slower in the Pacific and in North and Central Asia, due to migration to Australia and New Zealand, as well as the slower pace of demographic transition and the effects of the previously mentioned age- structure fluctuations.

In general, however, population ageing in most countries in Asia and the Pacific will take place at a more rapid pace than in developed countries. Countries in the ESCAP region will have less time to address the consequences. Moreover, ageing will occur when countries in the ESCAP region are not as advanced as the developed countries had been when they reached comparable levels in the ageing process. The proportion of children born to the ageing population of Asia and the Pacific will be smaller, and these children will be more mobile and better educated, presenting significant challenges for the future (see United Nations, 2005a). However, the inherent potential in a transitional age structure, if harnessed through the timely interventions discussed below, could help maximize benefits and enable countries to manage the challenges associated with ageing.

Age-structure transition in selected countries

The broad regional differences discussed above can be further illustrated in the experience of selected countries, as shown in figure 6. However, differences exist among the countries in terms of the timing and pace of age-structure transition, which is related to the timing and pace of the demographic transition. In general, every country will go through a period of 40 to 70 years during which the supply of labour will expand and overall dependency significantly decline. At later stages every country will inevitably experience population ageing, moderately at first and rapidly thereafter.

In countries such as Japan and the Republic of Korea, periods of labour-supply expansion are near their end. These countries are entering an era of labour-supply contraction, barring significant changes in the labour force participation of women. Their workforce is ageing along with the ageing of their populations. China, Thailand, Viet Nam and the Islamic Republic of Iran, where a precipitous decline in fertility began during the early 1990s, will experience the same phenomenon in the not too distant future. The Russian Federation has very low fertility coupled with high mortality among young adult males, due to behavioural factors. The Russian Federation also faces rapid ageing and an

impending decline in population size and the supply of labour. By contrast, countries such as India, Malaysia, Pakistan, Papua New Guinea, the Philippines and Uzbekistan will experience an expansion in the supply of labour for a few more decades, lasting in some, until the middle of this century. During this time ageing will occur at a moderate pace. Australia and New Zealand, due to their managed migration policy, are projected to slow the pace of decline in their supply of labour and in the ageing process.

Figure 6. Percentage of population by selected age groups in selected countries

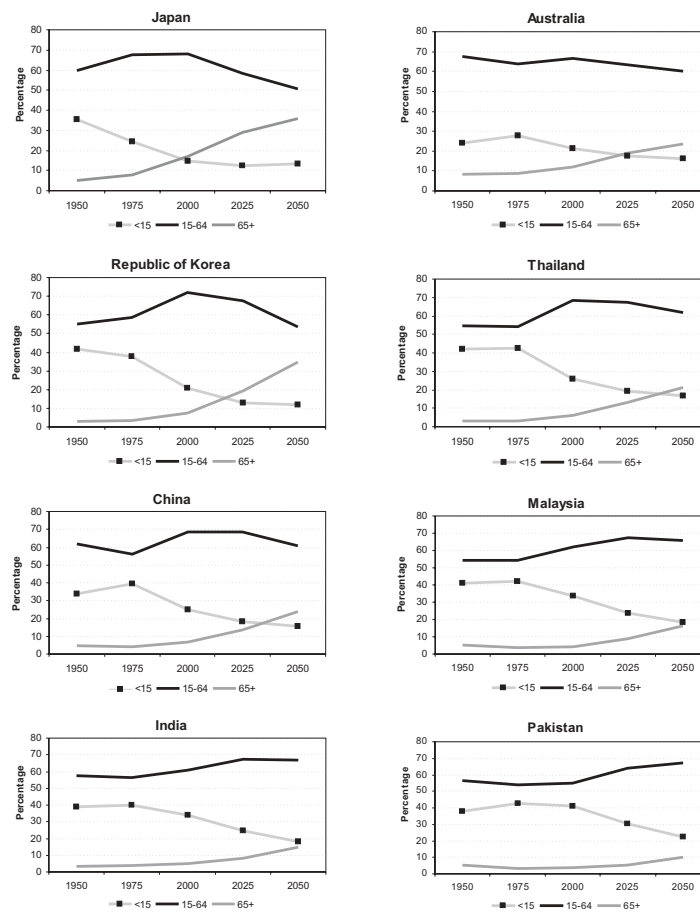
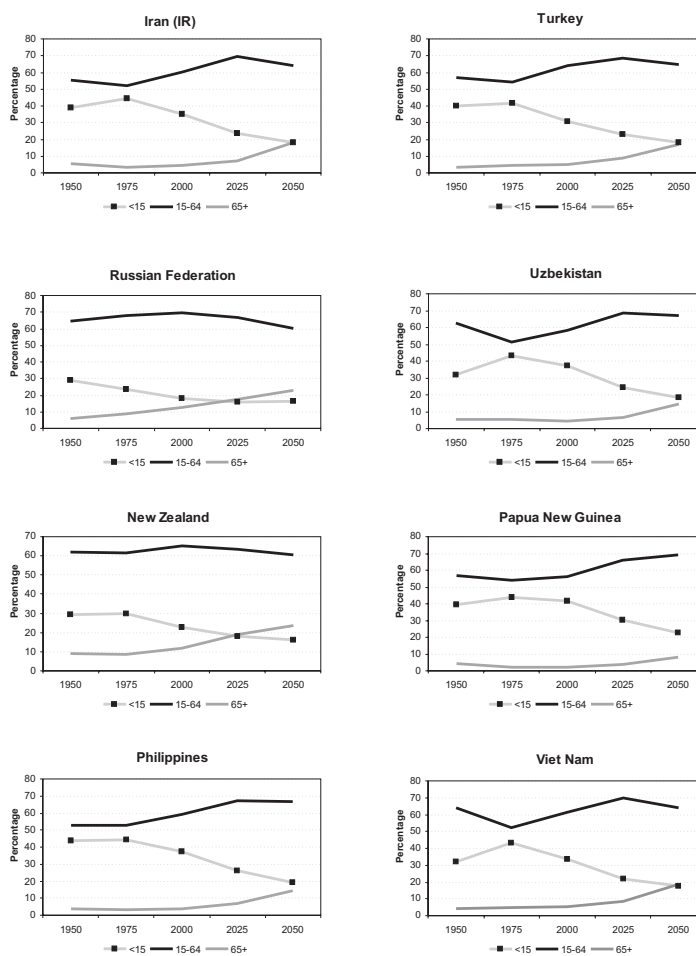


Figure 6. (Continued)



Source: United Nations (2005), *World Population Prospects: The 2004 Revision*, ST/ESA/SER.A/245, New York.

Age-structure transition, ageing and development

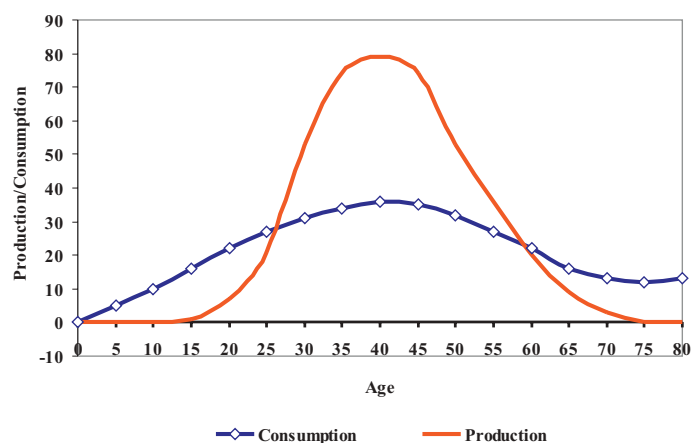
Age structure and development

As noted previously, the discussion about population and development during the 1960s to 1980s focused on the adverse implications for economic growth with high rates of population growth resulting from rapidly declining mortality and high fertility. Consequently, during the past several decades, population policies and programmes in most countries of Asia and the Pacific focused primarily on reducing fertility and population growth through government-supported family planning programmes.

The seminal work done by Coale and Hoover (1958) analysing the prospects of population change and economic development in Mexico and India – two of the countries experiencing rapid population growth at the time – played an important role in shaping the neo-Malthusian thinking of the 1960s: rapid population growth adversely affected economic growth. Two factors were central to their argument. The first was the impact on household savings of increasing household size. The impact was largely due to children, who would increase household consumption, and consequently reduce savings for investment, as well as investment in education and the health of children in the household. The second was the impact on government spending due to a very young population age structure. Increasing demand for investment in the social sector, particularly in education and health, would constrain investment in other sectors of production aimed at increasing the growth rate of gross domestic product (GDP) and generating employment for a growing labour force, albeit with a time lag. The impact of a young population age structure on economic growth, mediated through savings, capital formation and investment (and consequently on the quality and utilization of labour), therefore, has been at the core of the argument. However, the relationship is interpreted by many as an issue of a high population growth rate – and high population density – vis-à-vis resources.

Because population growth and fertility levels have declined significantly in the past few decades, many in policy and planning circles have the perception that population is no longer a major concern for development. This thinking is based on the old paradigm that it is mainly population growth that has an adverse impact on development. It reflects a lack of understanding that the relationship between population and development is mediated through the age structure of the population, as production, consumption, and hence savings and investment, are dependant on age – as shown in figure 7.

Figure 7. Age pattern of consumption and production



Therefore, it is important to understand how the age structure has an impact on development as it undergoes the transition from “young” to “old”. In this regard, the experience of Asian and Pacific countries provides some valuable lessons. The analysis in the preceding sections has indicated that age-structure transition provides a window of opportunity for economic growth through its favourable impact on dependency and labour-supply dynamics. However, as the experience of Asia and the Pacific reveals, such a transition alone even as it reduces dependency and increases labour supply is not sufficient. Benefits will accrue only if an enabling environment and supportive policies are in place for the development and utilization of human resources, economic growth and the creation of wealth.

Asian experience and lessons

Half a century ago, countries in Asia and the Pacific shared similar demographic features high but rapidly declining mortality, high fertility, and consequently, an increasing population growth rate and very young age structure but they differed in terms of their economic policies, governance and planning systems. Such systems were open or closed, centrally planned or market oriented, or a combination of both. They were also heterogeneous in their sociocultural and religious composition and related norms and practices. Geopolitical factors and ideological underpinnings also influenced the shaping of policies and programmes during that era.

Since the 1950s, as discussed in the preceding sections, countries in Asia and the Pacific have been undergoing a rapid demographic transition. By 2000, the process had been completed in many of these countries – in the remaining it is still under way (for details, see also Gubhaju and Moriki-Durand, 2003; Seetharam, 2002). Consequently, countries are at different stages of an equally rapid transition in their age structures, which has important implications for economic and social development. During this period, countries have also been undergoing other transitions – economically, socially and technologically – and a slow, but gradual, transition is occurring in political, governance and planning systems as well: from one-party to multiparty democracy, from the central to the local level, and to a free-market orientation, due to the increasing openness of their economies. As a result, countries in Asia and the Pacific today represent a mosaic, characterized by a high degree of diversity in economic growth and social progress.

What has been the role and importance of demographic factors, specifically the age-structure transition, in economic growth? A number of studies (e.g., Bloom and Williamson, 1998; Mason, 2001) indicate that the East-Asian demographic transition has been a major factor in the region’s rapid economic growth, contributing from one fourth to two fifths of East-Asia’s miracle. The evidence that emerges has been summarized as follows:

Between 1965 and 1990, per capita income rose annually by more than 6 percent. One explanation for this phenomenal growth is that in the late 1960s when the baby-boom generation started work, their entry into the workforce changed the ratio of workers to dependents in the population. With the benefits of a good education and a liberalized trade environment, this generation was absorbed into the job market and into gainful employment, thereby increasing the region’s capacity for economic production. The region’s working age population grew four times faster (an average of 2.4 per cent a year) than its dependent population... (Bloom, Canning and Sevilla, 2003, p. 45).

The studies also reveal that the benefit afforded by the changing age structure, called the “first demographic dividend”, is transitory, and the length of time the benefit can accrue, called the “window of opportunity”, will last for a few decades, typically between four and seven, in most countries. The studies also reveal that policies to stimulate economic growth and human capital formation are essential if the benefits afforded by the changing age structure are to be realized.

Highlighting the importance of supportive and synergistic policies in the East-Asian miracle, Mason (2005, pp. 2-3) states:

Although age structure variables have predictive power and can “explain” (in the statistical sense) a significant portion of economic growth, the relationship between demographic variables and the economy is not deterministic. Rather, the economic outcome from demographic change is policy dependent. The experience of the Asian Tigers provides very clear evidence in support of this view. A successful export-oriented growth strategy produced more than enough jobs to absorb the rapidly expanding workforce. A stable macroeconomic environment – until the late 1990s financial crisis struck – was attractive to investment. Large-scale-pay-as-you-go pension programmes that undermine saving and work incentives were avoided. These and other policies worked in concert with demographic change to produce high rates of saving and investment, rapid growth in employment, and spectacular economic growth. In the absence of complementary economic policies, the demographic dividend cannot be counted on to produce favourable economic results.

Thus, economic and social policies that promoted economic growth and created human capital, aided significantly by a changing age structure that is characterized by an increasing proportion of the population of working age and its effective utilization, have been an essential component of success in the economies responsible for the East-Asian miracle.

Policies and programmes to improve health and education can be facilitated by the transition in age structure. In analysing human capital aspects of economic development in Asia, Jones (2005, p. 42) states:

Declining dependency ratios and strong investment in human capital are inter-related; reduced dependency ratios have facilitated human capital deepening, particularly through an increase in public spending per secondary school student.

Together with an integrated health and voluntary family planning programme, these developments, in turn, led to a rapid decline in fertility and a shift in the age structures towards lower dependency ratios, thus reinforcing higher savings, investment and rapid economic growth.

In Japan, the most advanced country in Asia and the Pacific, the demographic transition began early in the twentieth century. The country's total fertility rate had declined to less than 3 children per woman by 1950 and it dropped well below the replacement level of 2.1 children per woman by 1975. The high proportion (more than 60 per cent) of people of working ages, as well as Japan's well-educated and healthy workforce, together with policies that focused on rebuilding the war-ravaged country, contributed to the rapid economic growth Japan experienced after the Second World War.

Examining the policy lessons from the East Asian demographic transition, McNicoll (2006) highlights the role of public administration and local institutions in contributing to the "miracle", as follows:

...the more significant lessons of East Asia have to do with the effectiveness of public administration and the local opportunity structures that it fosters. Getting those local institutions right not only directly promotes demographic transition but has an important, if ordinarily less-than-miraculous, economic payoff as well.

Australia and New Zealand, two of the other developed countries in the Asian and Pacific region, present a contrasting picture with that of Japan. Although the demographic transition was also well under way in these countries before 1950, their populations are projected to increase, albeit slowly, due to immigration. Also, the age-structure transition has been slower in these countries because managed immigration has played an important role in keeping the proportion of population of working age high (above 60 per cent) and fertility approximately at the replacement level due to high fertility among migrants and their preponderance in younger age groups. Along with other favourable factors, such as the openness of their economies and better human capital, lower dependency and the increased labour supply generated by migration have played a part in the economic growth of these countries.

Countries that lag behind, and those in which rapid economic growth is relatively recent, usually had policies and planning systems that stymied economic growth and/or human capital formation. This occurred even when they had been able to reduce mortality and moderate fertility and population growth through State-run family planning programmes. Consequently, they experienced increased proportions of their population being of working age. For example, in many countries in Asia and the Pacific centralized control and planning was once the norm. Production sectors were State-owned, and the role of the market was negligible. Thus, in countries such as the Russian Federation and those in Central Asia when they were part of the former Union of Soviet Socialist Republics

(USSR), the rate of GDP growth remained low. It still remains low (except in countries such as Kazakhstan and Turkmenistan during recent years as a result of revenues from oil and natural gas), even though their populations had achieved high levels of human capital development due to investments in health and education, as well as the promotion of equality between men and women. Furthermore, their dependency ratios have been declining and their supply of labour has been increasing.

Writing on the experience of the Russian Federation and the former USSR, Bloom, Canning and Sevilla (2003, p. 67) state:

Relative to other parts of the world, Russia has had a high working age share since at least 1950. From 1950 on... the high working-age share should have given the Soviet Union a significant economic boost. Instead...the country fell behind the capitalist world economically, to a greater degree than virtually anyone had anticipated. Although it is difficult to sort out causality, it is clear that the higher working-age share was not translated into robust economic growth, presumably the result, at least partly, of a state-driven economy insulated from market forces.

Countries experiencing high rates of economic growth in recent years (e.g., India and Viet Nam) also illustrate the contribution that age structure can make to economic growth, given a favourable policy environment. Until recently, a number of factors in these countries, such as poor health and education and State controls on production, have inhibited economic growth in spite of the increase in labour supply. Notwithstanding the differences between them, the opening up of their economies through trade liberalization, removal of capital controls etc., has provided the stimulus for entrepreneurship and rapid economic growth. It should be mentioned that Viet Nam is a centrally planned economy that had been engaged in a prolonged war and India is a mixed economy with democratic traditions, but is ideologically tilted towards a socialist approach. Given that the two countries continue to experience labour-force expansion brought about by age-structure transition, both can benefit significantly from the “first demographic dividend”. Reaping those benefits, however, would imply that the potential inherent in their human resources is further developed through improved education and health. It would also imply utilization of economic policies that promote savings and create conditions for private-sector investment domestic and foreign and generate employment and economic growth. In India, where the age-structure transition will take longer, the window of opportunity to benefit from this dividend will be open for few more decades.

In other countries, such as the Philippines and Sri Lanka, the beneficial effects of age-structure transition have not contributed to economic growth due to unfavourable political factors, among others. Herrin and Pernia (2003) conclude: “The Philippines experience is one where the advantages of a reasonable human capital endowment were frittered away through an inappropriate macroeconomic policy and adverse political factors”. Although Sri Lanka has also undergone rapid demographic and age-structure transition, and has been endowed with human capital, it could not benefit from the favourable effects of its changing age structure due to inward-looking and protectionist policies, as well as continuing civil strife and conflicts which began nearly three decades ago.

While the opportunity initially afforded by an increasing proportion of the population in the working-age groups, i.e., the first demographic dividend, is transitory in nature, a more sustained opportunity, i.e., the second demographic dividend, presents itself when the large number of young people who enter the workforce begin to save. These savings are partly a response aimed at protecting future consumption, as well as an investment in the education and health of their children. This in turn contributes to the growth of labour productivity, capital and income.

Realization of the second demographic dividend, i.e., the pro-growth effect of capital accumulation, depends on how accumulation of wealth is related to population ageing. Information about wealth accumulation, through various forms of financing for consumption during retirement years, and its contribution to the second demographic dividend, is beginning to emerge (for details, see Mason, 2005). An understanding of how this potential can be realized is important for sustaining economic growth into the future, as well as for effectively managing the social and financial security needs of a rapidly ageing Asian population.

Looking towards the future

Fertility and population growth have declined significantly in much of Asia during the past half century. Consequently, the age structure of populations is in the midst of a major transition. Countries are at different stages in this process. This transition is predictable, barring any shocks. It presents both opportunities and challenges for sustainable development of Asian and Pacific economies for the next half century and beyond.

A number of countries in the region have completed the demographic transition. Their populations and labour supply will begin to decline and the dependency burden, caused by the rising proportion of older persons in the population, will increase. At one end of the spectrum is Japan, where the

favourable demographic window of opportunity has already closed. Japan's closed-door policy on immigration has led to the beginning of a contraction in its labour force. This situation, which together with an ageing population and workforce and the "pay-as-you-go" pension system as it is applied today, will significantly strain the country's economy (see Bongaarts, 2004). There are other countries and areas in the region that are not far behind Japan. A key to deal with this issue is the provision of social and financial security for older persons. Thus, a review of existing pension systems is needed. Existing pay-as-you-go pension schemes can be effective in a rapidly growing economy, as well as in one where new labour-force entrants outnumber retirees. However, in situations where pension disbursements increase rapidly due to increases in the number of older persons and the longevity of retirees relative to workers who contribute to the scheme, the scheme will become unsustainable (see also Asian Development Bank, 1997; Ogawa, 2003). It would thus be equally important for such countries to review their policies on migration, the employment of women etc. This could help both meet the demands of the labour market and the needs of an ageing population.

Most of Asia's population is in countries where the demographic transition, that is, the shift from high to low mortality and fertility, is still under way. In these countries, population continues to grow as a result of fertility, which remains higher than the replacement level, and "population momentum". At the same time, the age structure is also undergoing rapid change owing to rapid declines in fertility, providing countries with the window of opportunity afforded by a rapidly expanding working-age population. Recent trends in globalization, characterized by increased trade, flow of capital and infusion of new technologies, could help many of these countries benefit from the "demographic dividend" afforded by the changing age structure.

In many of these countries, particularly those in South Asia, access to education and health services remains inadequate, and women remain considerably disadvantaged. Fertility levels also remain high due to a lack of access to reproductive health services, high unmet need for family planning and the relatively lower status of women. Access to services is severely limited for adolescents and young adults who constitute a large share of the population, and in many countries, an increasing share. Thus, policy priorities for these countries should be to continue improving access to education and health, including reproductive health services, as well as promoting gender equality and women's empowerment. This will sustain the momentum of fertility decline, which in turn will facilitate greater investments in improving access to, and the quality of, education and health services.

At the same time, these countries can benefit from favourable age structure (increased labour supply and reduced dependency) through the first demographic dividend, which is of varying magnitude and duration. They would benefit from supportive economic and social policies that promote economic growth and human capital formation and its effective utilization, as well as be able to create efficient public administration and local structures. They could also initiate steps to establish mechanisms for benefiting from the second demographic dividend by improving facilities and institutions that would foster wealth accumulation. In the long run, this would contribute to better management of the finances needed by an ageing population.

Endnote

1. The population estimates used in this paper are derived from United Nations (2005). Estimates for future years assume a convergence of total fertility rates towards the replacement level by 2050 (see figure 2), although this might be unrealistic for countries in which fertility has reached, or will decline to, levels well below the replacement level, thus having greater impacts on age-structure transition and the ageing of those populations.

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