

## BELOW-REPLACEMENT FERTILITY IN EAST AND SOUTHEAST ASIA: CONSEQUENCES AND POLICY RESPONSES

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Fourteen countries in Asia have total fertility rates at or below replacement level. This is more pronounced in China, Japan, the Republic of Korea, Singapore and Thailand. The implications are far-reaching and profound as they affect the age structure of the population, giving rise to population ageing, labour force shortages, increased elderly dependency ratios and feminization of the aged population. Evidence from European countries suggests that although fertility may rebound, in most countries it is highly unlikely that fertility will recover sufficiently to reach replacement level in the near future. Mortality reduction will continue to be an overriding policy goal, which would further enhance the ageing process. Therefore, the greatest challenge will be to pension systems, old-age care systems, and health systems or health insurance. This paper first examines the fertility transition in five low-fertility countries. It then discusses the policy measures that these countries have adopted in response to low fertility and population ageing. The paper concludes with the policy implications for healthcare, social care, income security and caregiving facility, and the scope for further study.

**Keywords:** ageing, Asia, below-replacement fertility, health policy, labour shortage, old age benefits, pension schemes, population policy, retirement, social welfare.

During the past 50 years, Asia has experienced a remarkable decline in fertility and mortality. The total fertility rate (TFR) of around six children per woman in the period 1950–1955 dropped by more than half to 2.7 in the period 1995–2000. The current fertility level in Asia is slightly below the estimated world average of 2.8 (Table 1). Altogether, there are 14 countries in the Asian region where the TFR was at or below replacement level (2.1 children per woman) during the period 1995–2000. Fertility decline is more pronounced in Japan, the Republic of Korea and Singapore, where the TFRs are below 1.6 per woman, while those in China and Thailand are marginally higher at 1.8.

As with fertility, there has been a substantial decline in mortality in Asia. As a result, life expectancy at birth has increased considerably. The average lifespan of a

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**Table 1 Total fertility rates, World and Asia, 1950–2000**

Region	Total fertility rate (children per woman)												
	1950–55	1955–60	1960–65	1965–70	1970–75	1975–80	1980–85	1985–90	1990–95	1995–2000			
World	5.01	4.95	4.97	4.90	4.48	3.90	3.56	3.35	3.01	2.82			
Asia	5.88	5.63	5.64	5.68	5.07	4.17	3.66	3.38	2.95	2.70			
Eastern Asia	5.68	5.10	5.16	5.43	4.46	3.13	2.46	2.36	1.88	1.76			
South-Central Asia	6.08	6.07	6.00	5.86	5.60	5.08	4.79	4.40	3.99	3.58			
South-Eastern Asia	5.95	6.15	6.09	6.03	5.53	4.91	4.24	3.71	3.24	2.83			
Western Asia	6.40	6.28	6.21	5.94	5.62	5.25	4.98	4.72	4.23	3.86			

Source: United Nations 2001a.

**Table 2 Total fertility rates, selected Asian countries, 1975–2001**

Country	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
China	3.57	2.31	2.20	2.17	2.01	1.84	1.83	1.81	1.78	1.81	1.82	1.82	1.80	–	1.80
Japan	1.91	1.75	1.76	1.54	1.53	1.50	1.46	1.50	1.42	1.43	1.39	1.38	1.34	–	–
Rep. of Korea	3.23	2.70	1.67	1.58	1.70	1.77	1.78	1.74	1.64	1.70	1.56	1.48	–	–	–
Singapore	2.07	1.82	1.62	1.72	1.82	1.82	1.78	1.75	1.71	1.70	1.64	1.50	1.50	1.59	–
Thailand	4.90	3.80	2.70	2.30	2.30	–	–	2.10	2.10	2.00	2.00	2.00	2.00	1.80	1.80

Sources: Chamratrithirong n.d.; China Population Information and Research Centre 2001; Cho and Lee 1999; ESCAP 1995–2001; Department of Statistics 2002; Statistics Bureau 2002; United Nations 2000.

child born in the period 1950–1955 was a little over 40 years, while a child born in 1995–2000 could be expected to live almost 66 years, an increase in life expectancy of more than 50 per cent in less than 50 years (United Nations 2001a). The current life expectancy at birth in Asia is slightly higher than the world average of 65 years. While females in general have an advantage over males in the number of years of life they may be expected to live, the difference tends to widen with the increased life expectancy at birth.

These demographic dynamics (declining fertility, increasing longevity and the widening sex gap in life expectancy at birth) have engendered issues that are emerging as major concerns in Asia in general, and East and Southeast Asia in particular. The implications are far-reaching and profound as they affect the age structure of the population, giving rise to population ageing, labour force shortages, increased elderly dependency ratios and feminization of the aged population.

This paper focuses on five low-fertility countries: China, Japan and the Republic of Korea in East Asia, and Singapore and Thailand in Southeast Asia.

### **Levels and trends in total fertility rates**

Table 2 shows the levels and trends in the total fertility rates in the five low-fertility countries. It reveals that fertility had already dropped below replacement level in Japan and Singapore in 1975 while, during the same period, in China the TFR was 3.6, in Korea 3.2 and in Thailand 4.9. Although low fertility already prevailed in Japan and Singapore in 1975, over the past 25 years these countries have experienced a significant drop in fertility.

In Japan, fertility decline temporarily stalled at a TFR of around 1.8 until 1985. More recently, fertility decline resumed and the TFR remained at 1.5 between 1990 and 1994. More recently, fertility further declined to a record-breaking TFR of 1.34 in 1999. The initial decline in fertility in Japan was caused by the increase in the prevalence of modern contraception, especially sterilization, and the legalization of induced abortion in the 1970s. Other reasons were a significant fall in the proportion currently married among women of reproductive age and a decline in fertility among married couples (Atoh 2001). The resumption of fertility decline that occurred after 1985 was impelled by underlying socio-economic changes, including the sharp rise in real income per capita, which increased almost eightfold between 1955 and 1990. During the same period, the proportion of the urban population rose from 37 to 77 per cent, and the average lifespan increased from 50 to 76 years for males and from 54 to 82 years for females (Retherford, Ogawa and Sakamoto 1996).

Singapore experienced a dramatic decline in fertility from its peak of more than six children per woman in 1957 to reach replacement level in 1975 (Yap 2000). Despite government efforts in the mid-1980s to reverse the declining trend, fertility continued to fall below replacement level. The TFR of Singapore was recorded at 1.59 in 2000 (Department of Statistics 2002). Factors that contributed to the rapid decline in fertility include higher ages at marriage and childbearing, rising proportions of women remaining single and increased use of contraception and abortion.

In Korea, as a result of the government population control program the TFR drastically declined from a high level of six in 1960 to replacement level in 1984 (Cho and Lee 1999). The process of decline continued thereafter, and the TFR fluctuated

tuated between 1.6 and 1.8 between 1985 and 1997, and further declined to 1.5 in 1998. The successful implementation of the National Family Planning Programme played an important role in the rapid decline in fertility in Korea, but was phased out soon after fertility fell well below the replacement level (Caldwell, Phillips and Khuda 2002). However, socio-economic development, including such factors as rapid urbanization, increased education and economic participation of females, has facilitated the acceptance of the small-family norm and contributed to the sustained decline in fertility (Cho and Lee 2000).

The fertility transition in China, in particular the rapidity with which the decline occurred, is somewhat different from the fertility transition that took place in the other countries. Government policy played a vital role in the decline of fertility, and the unprecedented drop in the TFR, from 3.6 in 1975 to 2.3 in 1980, occurred after the Chinese government launched a comprehensive and strongly enforced family planning program in the late 1970s. The principles of late marriage, longer birth spacing and fewer births were actively promulgated throughout the country along with the vigorous implementation of the one-child policy (Jiang and Zhang 2000). Subsequently, as the rigid antinatal policies were somewhat relaxed, fertility decline stalled and the TFR remained at around 2.2 until 1990. Since 1990, it has fallen precipitously to below the replacement level; this has been credited mainly to the implementation of the strict family planning program (Zeng 1996). The contraceptive prevalence rate among ever-married women increased sharply to 85 per cent in 1992, from 71 per cent in 1988 (United Nations 2000).

The successful family planning program in China helped to free married women from high-order births and heavy family burdens, giving them more opportunities to participate in socio-economic activities. Besides, low infant mortality, increasing life expectancy and sustained economic development provided a favourable environment to maintain low fertility. Survey results show that even in rural areas more than four-fifths of women of reproductive age do not want more than two children; high proportions of women are even in favour of the one-child family (Jiang and Zhang 2000). The TFR in China has recently remained constant at 1.8.

The fertility transition in Thailand is distinct from that in the other countries covered here. Until 1975, The TFR in Thailand was fairly high at 4.9. After the first sign of fertility decline was clearly documented in the late 1970s (Knodel, Chamrathirong and Debavalya 1987), the speed of decline was so extreme that the TFR dropped to 3.8 in 1980, then to 2.3 in 1990, representing a reduction of about 40 per cent during the decade 1980–1990 (Table 2). Fertility continued to decline in Thailand through the 1990s, eventually dropping to below the replacement level. Recent data indicate that the TFR of Thailand is 1.8 (Institute for Population and Social Research 2001).

Several factors have contributed to the decline in fertility in Thailand: the age at marriage for both men and women has gone up, the level of celibacy has increased and childbearing has been compressed into a narrow reproductive span. However, the dominant factor in the rapidity of the decline is considered to be the use of contraception, which increased from about 34 per cent in 1975 to 72 per cent in 1996 (Ruffolo and Chayovan 2000). Some studies also suggest that the desire for a smaller family existed even before the start of the National Family Planning Programme. These have documented that Thai women had sufficient emotional incentive, economic resources and physical mobility to motivate a desire for a small

family owing to their active participation in trading and farming (Mougne 1988). Thus, Thailand was able to achieve such a rapid fertility decline because of the latent desire for a small family that could be realized through the National Family Planning Programme.

### **Consequences of low fertility**

As a result of low fertility, fewer children are born and progressively large numbers of adults move into the older age groups. Changes in the age structure of a population and population ageing are inevitable consequences of low fertility. In the long term, population ageing is not the only radical outcome of persistent low fertility. An old age structure also provides the momentum for a decline in population, just as a young population provides the momentum for accelerated population growth (McDonald 2000). Persistent decline in fertility, increased longevity and the widening gap between female and male life expectancies at birth also result in an increase in the old-age dependency ratio and feminization of the elderly population. These consequences of the low fertility experienced in China, Japan, Korea, Singapore and Thailand are discussed below.

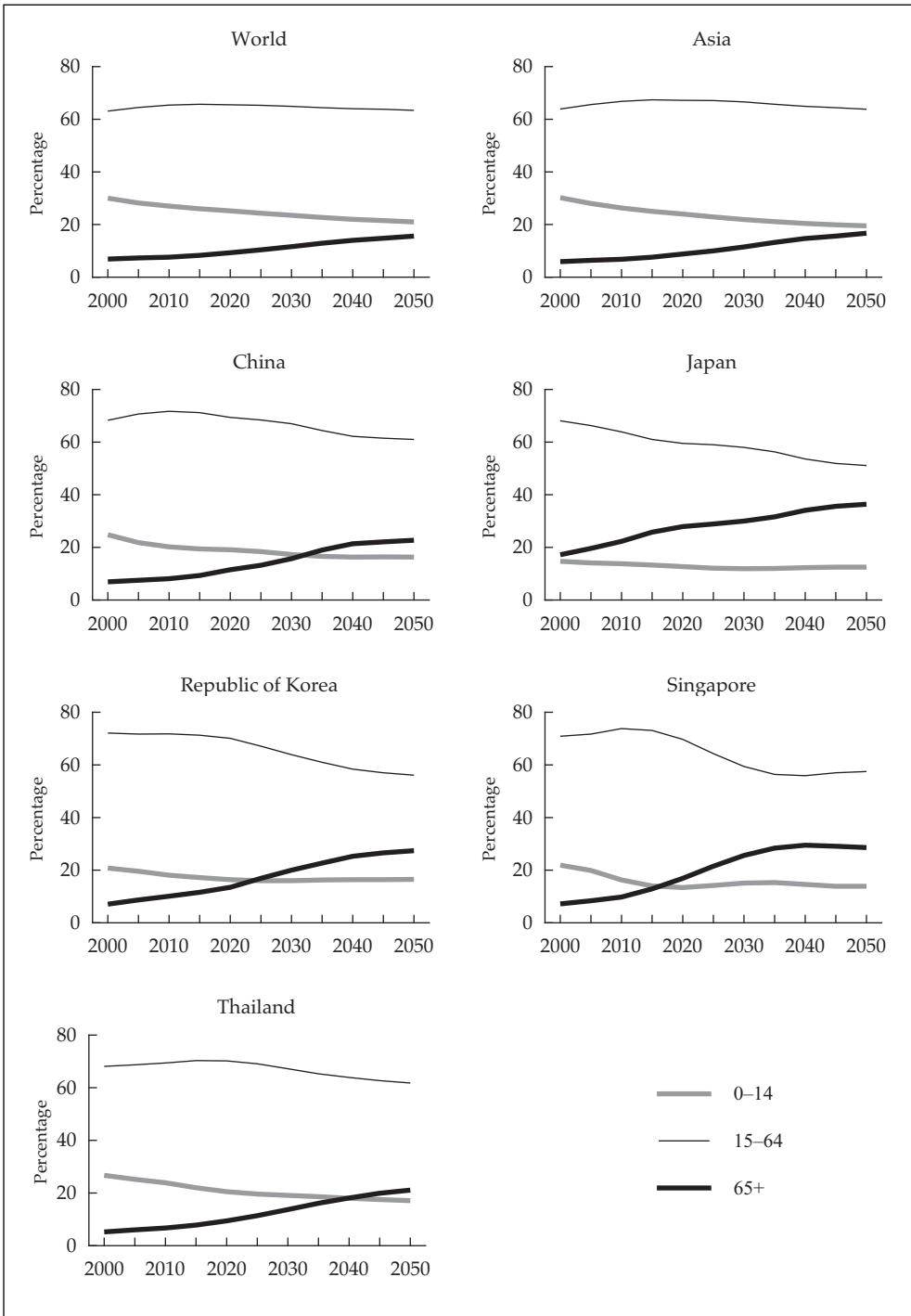
#### *Changes in age structure and population ageing*

The nature of the substantial change in population age structures as a direct outcome of the current low fertility regime is seen in Figure 1. In the period 2000–2050, the proportion of the population under age 15 (young-age population) will experience a continuous fall, while the proportion of the population aged 65 and older (old-age population) will increase. In the world as a whole as well as in Asia, the young-age population and the old-age population will converge during the next 50 years. All the five countries examined in this study will have a crossover of these age groups by 2050; its timing, however, will vary with the pace of their demographic transition: the earlier and faster the transition, the earlier the crossover.

Among the five countries, the fertility transition occurred much earlier in Japan which, therefore, has already experienced the crossover of its young-age and old-age populations. In 2000, Japan's old-age population represented 17 per cent of the total population as compared with the young-age population representing 15 per cent of the total. With the dramatic increase in the next few decades, it is projected that, in 2050, Japan's old-age population will make up 36 per cent of the total population, almost three times as high as the proportion of the young-age population. As the changing proportions suggest, Japan will continue to be one of the most aged countries in the world. It is also worth noting that 3.8 per cent of Japan's population in 2000 consisted of people aged 80 years and older (oldest-old). This fast-growing population of the oldest-old is projected to constitute 10.4 per cent of the total population in 2025 and 15.4 per cent in 2050 (United Nations 2002).

The other four countries will also experience a crossover of the proportions of their young and old populations, with rapid population ageing occurring within the next few decades. According to Figure 1, the proportion of the old-age population will exceed that of the young-age population in 2020 in Singapore, 2025 in Korea, 2035 in China and 2040 in Thailand. In Korea and Singapore, the population is also fast ageing, with 7 per cent of the population in the age group 65 years and older in 2000, and a projected further increase to 27–29 per cent in 2050. In China,

**Figure 1** Projected (medium variant) percentage distribution of population by broad age groups, World and selected Asian countries, 2000–2050



Source: United Nations 2001b.

the proportion of the old-age population will increase from 7 per cent to 23 per cent and, in Thailand, from 5 per cent to 21 per cent during the same period.

The demographic dynamics in the East and Southeast Asian region will also cause a substantial drop in the proportion of the working-age population. In the world as a whole and in Asia, the proportion of population in the working age group (15–64 years) will remain more or less constant, about 63 per cent, over the next 50 years. However, changes in the age structure of the population are more pronounced in countries where fertility declined rapidly. For example, Japan will experience a considerable drop in the proportion of the working-age population: by the year 2050, it will be only a little over half the population. Korea and Singapore will also have decreased proportions in the working ages (56 and 57 per cent respectively) in 2050. China and Thailand will have a little over three-fifths of their populations in the working ages in 2050, lower than the world average. Overall, according to the United Nations (2001a) medium variant projections, Japan will experience a decline in its total population after 2010, Singapore after 2030, and China and Korea after 2035. Thailand will continue to show an increase in population, though an almost negligible one.

#### *Elderly dependency ratio and feminization of the elderly population*

Another obvious implication of low fertility and improved expectation of life at birth is the increase in the elderly dependency ratio (number of elderly population per 100 persons in the working ages). It is apparent from Table 3 that, as an outcome of continuing low fertility, there will be a significant increase in the elderly dependency ratio: the worldwide ratio will increase from 11 per cent in 2000 to 25 per cent in 2050, and in Asia this indicator will go from 9 to 26 per cent during the same period. The burden of elderly dependency that the world and Asia are likely to face in 2050 already exists in Japan. According to the United Nations (2001b) medium variant projections, the elderly dependency ratio, now 25 per cent in Japan, will be almost twice as high in 2025, and will rise to 71 per cent in 2050.

In the other four low-fertility countries, although the current elderly dependency ratios are 10 per cent or lower, the magnitude of the increase varies considerably by country. Both Korea and Singapore will experience a rapid fivefold increase in this ratio, reaching 49 per cent in Korea and 50 per cent in Singapore in 2050. The dependency ratios in China and Thailand are also likely to exhibit substantial increases in the next 50 years, to 37 per cent in China and 34 per cent in Thailand.

In addition to the increase in elderly dependency ratios, a large sex disparity in improved life expectancy at birth favouring females has been observed in low-mortality countries. As a result, the sex ratio of the elderly population (males per 100 females among the population aged 65 years and older) has begun to decline in these countries. Among the five low-fertility countries, feminization of the elderly population is particularly pronounced in Japan and Korea as apparent from Table 4; for every 100 elderly females, there are slightly over 60 elderly males in Korea and 70 in Japan. In China, Singapore and Thailand, the sex ratio of the elderly population is between 79 and 85 males per 100 females. In the next 50 years, this sex ratio will remain relatively stable, except in Korea, where it will increase from 63 in 2000 to 77 in 2050 and where, nonetheless, the female aged will constantly outnumber the male aged during this period.

The excess of women in the older ages is typically viewed as problematic

**Table 3 Projected (medium variant) elderly dependency ratio, World and selected Asian countries, 2000–2050**

Country or region	2000	2010	2025	2050
World	11	12	16	25
Asia	9	10	15	26
China	10	11	19	37
Japan	25	35	49	71
Republic of Korea	10	14	25	49
Singapore	10	13	33	50
Thailand	8	10	16	34

Source: United Nations 2001a.

because it reflects high levels of widowhood and various difficulties associated with it, especially of poverty. A higher proportion of older women are likely to be widowed owing both to the difference in ages at the time of marriage (women tend to be younger than their spouses) and to the higher life expectancy at birth for women compared with men (Neville 2000). Because women are less likely to be employed in the formal sector, they tend to have shorter working years and smaller earnings, and often do not have adequate pensions or occupational skills to support them in old age. Moreover, a majority of the institutionalized aged are the oldest-old women, often widowed, who usually suffer from poor health (United Nations 2001c). Thus, the financial security as well as the health of aged women will be one of the biggest problems faced by the aged countries.

### **Policies and programs in response to low fertility**

Policies and programs adopted in response to low fertility can be classified into three categories: no-intervention, welfare-focused and pronatalist. There is also a movement towards accepting more immigrants to meet the demands caused by the labour shortage in some countries.

The first type of policy does not explicitly take measures to increase fertility. In Thailand, the population policy has been integrated into the Five-Year National Economic and Social Development Plans. For example, the Seventh Plan (1992–1996) aimed at reducing the population growth rate from 1.4 per cent in 1992 to 1.2 per cent in 1996. However, in the Eighth Plan (1997–2001), there was no clear target on population growth, suggesting that the Thai government had adopted the principles espoused in the Programme of Action of the International Conference on Population and Development in 1994, which scrapped the notion of targets. Thus, individual freedom to choose the desired number of children is respected (Ruffolo and Chayovan 2000).

The second type of policy emphasizes the improvement of the quality of the population and welfare services, particularly for women. Korea implemented its New Population Policy in 1996 to improve the quality of life and welfare services



**Table 4 Projected (medium variant) sex ratio of population aged 65+ (males per 100 females), World and selected Asian countries, 2000–2050**

Country or region	2000	2010	2025	2050
World	76.2	77.1	79.9	80.6
Asia	84.3	83.2	84.6	82.3
China	85.2	84.5	83.6	80.3
Japan	71.6	73.1	71.9	72.4
Republic of Korea	63.0	68.6	73.6	76.9
Singapore	82.9	83.0	85.5	80.2
Thailand	79.4	78.2	75.7	74.7

Source: United Nations 2001b.

while maintaining below-replacement-level fertility. This policy aims to empower women by providing more employment opportunities, to prevent an unbalanced sex ratio by reducing sex-selective induced abortions, and to enhance family health by expanding childcare institutions and providing maternity leave and family allowances (Cho and Lee 2000). Hoping for indirect effects to reverse the low-fertility trend, Japan has implemented measures to provide more welfare services and a better environment for childbearing, such as the Basic Law for a Gender-Equal Society (Zoubanov 2001). China's population policy has emphasized 'quality' family planning services as well as the enhancement of women's status with the continued promotion of the small-family norm. Empowering women and increasing their participation in economic activities are assumed to result in fewer and healthier births (Jiang and Zhang 2000). Current Chinese family planning policies, as reflected in the new Population and Family Planning Law adopted at the 25<sup>th</sup> Session of the Standing Committee of the Ninth National People's Congress on 29 December 2001, continue to encourage late marriage and childbearing and advocate the one-child policy. Additionally, to facilitate family planning programs, the Chinese government plans to establish and improve social-security arrangements by providing basic old-age insurance, basic medical insurance, childbearing insurance and welfare benefits.

The third type of policy, taking a pronatalist position, is clearly observed in the case of Singapore. Realizing the consequences of below-replacement-level fertility, the Singaporean government has adopted a 'selective' pronatalist policy, which aims at increasing the fertility of educated Singaporeans. Since the mid-1980s, the government has introduced a series of measures, such as the Graduate Mother Scheme giving priority in primary school registration to children of graduate mothers; income tax relief for qualified mothers; and matchmaking activities for graduate single men and women. The government has also lowered the qualifying educational level to include secondary education and implemented 'three or more' policies, which include promoting early marriages, financial incentives to have more children and various welfare provisions, including childcare subsidies and childcare leave (Yap 2000).

In addition to the measures to raise the fertility level, policies to accept more foreign workers and immigrants have been considered to redress the changing population composition and labour shortage. Among the five low-fertility countries, Singapore has taken the most apparent measures to relax immigration policy and, from the 1980s, started to accept more unskilled foreign workers on short-term work permits as well as to recruit professionals to work and take permanent residence in Singapore (Yap 2000). In both Japan and Korea, the possibility of relaxing immigration laws has also been considered, with measures to accept more trainees on short-term contracts. However, the idea of accepting large numbers of immigrants seems difficult to realize because of the perceived impact of a mass introduction of foreigners on these countries' socio-economic systems (Cho 2001; Katsumata 2001; Kim 2001).

### **Policies and programs in response to population ageing**

In response to low fertility and the resulting ageing of the population, the governments of the five low-fertility countries have adopted various policy measures for the aged in the areas of healthcare, financial security and social care. Although there are variations in the current levels of old-age welfare coverage, the policy measures currently in place and planned for the future reflect government commitments to alleviating the problems associated with ageing.

#### ***Healthcare***

Current governmental medical insurance varies from universal coverage in Japan to the limited coverage in China. In addition, Japan, given the high proportion of the oldest-old in its population, has also implemented policies to support long-term physical care for the frail elderly. In Japan, universal coverage under National Health Insurance has been in effect since 1961 with the provision of a community-based insurance program designed for people who are not covered by employee health insurance. In addition to universal medical insurance coverage, Japan introduced the Gold Plan (1990) and New Gold Plan (1994) to cater to the needs of the increasing number of very old people. These plans aim to ensure long-term homecare and reduce the number of the bedridden elderly. These plans clearly demonstrate the government's role in stressing the need for user-oriented informal homecare services rather than formal institutionalized hospital care (Kojima 2000).

Korea, another highly insured country, also provides near-universal (96.7 per cent) medical insurance for people aged 65 and older under its National Health Insurance Programme. This consists of three different schemes, the industrial health insurance fund, government health insurance fund and regional health insurance fund. The elderly who are not covered by these schemes are covered by medical assistance. Koreans are also entitled to free medical examinations, including X-rays and blood tests, to better detect and prevent serious illnesses at the early stages. To address the need for long-term care, the government recently introduced a Special Ten-Year Plan (1996–2005) for the elderly with dementia, which includes construction of nursing facilities and hospitals (Chung 2000; Cho 2001).

In contrast to Japan and Korea, the Singapore government gives primary importance to individual responsibility for healthcare. In Singapore, it is mandatory that employees deposit 6 to 8 per cent of their monthly income in a compulsory savings

account called Medisave and used for paying medical expenses (Ministry of Health 2002). However, for low-income groups the government provides various forms of public health assistance, including subsidized healthcare at public hospitals and other insurance systems. Community living and homecare constitute a basic principle in the care of the aged in Singapore, and institutional long-term healthcare facilities, catering mostly for the low-income aged, are generally discouraged (Cheung 1994).

On the other hand, access to health insurance for the aged is very limited in China. Only government employees, urban residents and employees of large collectives are eligible for old-age insurance provision. Thus, most old people who live in rural areas (three-fourths of the total aged population) are not covered by the national insurance policy (Wu 1994). Until recently, the insurance coverage in Thailand under the Civil Servant Medical Benefits Scheme was more-or-less similar to that of China, but medical insurance has been extended to the needy elderly in general through the provision of a free healthcare card and a voluntary insurance scheme (Kamnuansilpa *et al.* 2000). The medical insurance coverage was improved in 2001 with the introduction of the '30-Baht Health-Care Scheme' in the medical care plan. Under this scheme, patients are entitled to treatment for a wide range of ailments by paying only 30 baht (US\$1 = 44 baht) per visit to a participating medical facility, while the additional costs for the treatment are covered by government subsidy (Bhatiasevi, Hutasingh and Asavanonda 2001; Ogawa 2002). This new scheme may be considered as a near-universal healthcare plan for Thailand.

### *Economic security*

The policy measures implemented to ensure the economic security of the increasing numbers of old people in the five Asian countries fall into two main areas: retirement benefits and employment opportunities. For example, the Japanese government has provided pensions for all Japanese under the National Pension System since the 1960s (Kojima 2000). In Korea, the National Pension Programme was extended to cover about 60 per cent of the total population in 1997, and is expected to cover more of the population in the future. In 1998, a non-contributory old-age pension program was also introduced for the low-income elderly who were not covered by the previous program (Chung 2000; Cho 2001). In Singapore, old-age financial security is provided through savings in the Central Provident Fund (CPF) that can be withdrawn as a form of pension after age 55 (Cheung 1994).

Besides the provision of pensions, policies have been implemented to protect old people in need. China provides five guarantees, which include food, clothing, shelter, medical care and funerals for the childless and frail aged (Du 1999); Thailand, Singapore and Korea provide monthly allowances for the aged poor. Furthermore, Singapore has instituted the Maintenance of Parents Act, which enables parents to sue children for financial support (Cheung 1994; Knodel *et al.* 1999; Chung 2000).

One of the emerging problems arising out of these social security systems is the increasing national expenditure as a result of population ageing. Having seen the rapid increase in their expenditures, Japan and Korea have begun to revise the social security system for the elderly. The national pension system in Japan was revised in 1994 to gradually raise the eligible age for pensions from 60 to 65 years by 2013, and also to reduce the full benefit level while increasing the contribution rate (Zoubanov 2001). The law to provide free medical care for the aged in effect

since 1973 was also revised in 1982 and 1994 to increase the share of the insured (Kojima 2000). In Korea, a committee was entrusted with the task of reforming the social insurance system in 1997; consequently, the government revised the National Pension Act in 1998 with the objective of coping with anticipated financial instability. The most notable change has been a reduction in the pension contribution (from 70 to 60 per cent) paid by average waged workers with 40 years of contributory history. Other changes include raising the retirement age from 60 to 61 years in 2013, and by one more year every five years until retirement becomes mandatory at 65 years in 2033 (Chung 2000; Cho 2001).

In comparison to the countries that provide high pension coverage, the pension coverage in China and Thailand is still limited. In Thailand, only government employees (about 7 per cent of the total labour force) are entitled to receive pensions. Although pension coverage for private workers has been in effect since 1998, it affects only about 18 per cent of the total labour force (Knodel *et al.* 1999). Similarly, the current pension system in China is limited to government employees, urban residents and the employees of large collectives (Wu 1994). In both these countries, most old people depend on the family for their economic security.

Studies implemented by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) found that most Chinese and Thai old people (60 and older) live with their children; less than 10 per cent of them alone (Du 1999; Wongsith and Siriboon 1999). In Thailand more urban than rural aged parents live with their children; this may be explained by the higher land price in urban areas compelling children to live with their aged parents. In China, on the other hand, the urban aged are less likely to live with children than the old in rural areas, and tend to live with a spouse, possibly because of the higher pension coverage for urban residents as well as their higher life expectancy.

There are also noticeable differences in living arrangements between old women and men. A significantly higher proportion of elderly males than females live with their spouses. In China, about 80 per cent live with their spouses as compared to 60 per cent of the female aged, and in Thailand, about 70 per cent of the male elderly live with their spouses compared to only 24 per cent of the female elderly. This is because, apart from living longer and usually being younger than their husbands, women less often remarry after the death of their spouses and so are more likely to be widowed in old age. In addition, many are less educated than men, economically weak and so left with fewer choices in their living arrangements, but traditionally depend on their children.

It was also observed that although many Chinese and Thai elderly receive financial support from their children, they are also active contributors to the family. Considering the fairly low income of the aged, it is surprising that close to one-third of them in Thailand give food, clothes or other forms of material support daily to their children or grandchildren. Furthermore, the elderly, especially females, do more household chores than any other family member: more than half of the female elderly in China reported that they were mainly responsible for household cooking, cleaning or laundry, and more than half of the elderly respondents in Thailand looked after their grandchildren (Du 1999; Wongsith and Siriboon 1999).

Along with the revisions of the social security systems, policies encouraging continued employment of the aged have been formulated in many countries. In Japan, Korea and Singapore, various measures to promote continuous employment

include raising the retirement age, opening job placement offices for the elderly, specifically allocating jobs for the elderly and providing subsidies for companies which hire elderly workers (Cheung 1994; Chung 2000; Kojima 2000). Moreover, in accord with the promotion of continued employment, the pension scheme in Japan was reformed to encourage pensioners to rejoin the workforce by providing a partial pension for elderly workers who earn up to a certain limit (Katsumata 2001).

Although there has not been a significant change in policy in relation to the retirement age in Thailand and China, a noticeable percentage of the Thai elderly, especially the young-old (aged 60–69), have expressed their unmet need for work. According to the ESCAP studies, approximately 20 per cent of the rural elderly and 30 per cent of the urban elderly in their sixties had an unmet need for work. Furthermore, about 35 per cent of the Thai elderly felt that there should be no age limit for work. These findings suggest that many old people find it necessary to work in order to be able to support themselves. Their desire to work is also supported by their reasonably good health; more than 80 per cent of the aged in both countries have no problems with daily living activities (Du 1999; Wongsith and Siriboon 1999).

### *Social care*

In addition to the policies to provide healthcare and economic security for the aged, measures have been implemented to support the social life of the elderly and their family members. As the population ages and the number of frail old people increases, social facilities to care for the elderly are in greater demand. Although there is a pressing need for facilities to provide long-term care, the preferred policy response seems to be for home or community-based care rather than institutional care.

Among the five low-fertility countries, policy measures instituted in Singapore particularly focus on community-based aged services. The basic principle of the Singaporean policy is to discourage long-term institutional care, unless unavoidable, but to recommend family living in the community. In order to promote this, the government's Housing and Development Board operates housing plans like multi-generation housing and 'granny flats' (apartments accommodating unrelated old people). In addition, heavily subsidized voluntary organizations provide various community-based social services (home nursing, day-care centres, meal delivery) for the elderly (Cheung 1994; Yap 2000).

Also recognizing the need to care for the frail aged, in Korea there are about 100 social care centres delivering home help, day-care and short-term care services (Chung 2000). Japan has provided similar services since the 1970s and, through the introduction of the Gold Plans in the 1990s, home-based care aided by these social services has been even more emphasized (Kojima 2000). By improving social services for the elderly and their families with these Plans, the government aims to move some of the responsibilities of caring for the aged back to families, as well as to the aged themselves (Ogawa and Retherford 1997). Thailand operates Elderly Social Service Centres where the elderly can avail themselves of income-generating activities, educational workshops and physiotherapy. There are also informal gatherings called Elderly Clubs, which were originally initiated by governmental bodies, such as the Ministry of Public Health (Knodel *et al.* 1999).

However, the provision of residential facilities, especially institutional homes, is

lacking in many countries. For example, Thailand has only 16 public nursing homes. The low prevalence of public homes in Thailand reflects the basic policy of the government to emphasize the traditional role of the family in caring for and supporting the elderly (Wongsith and Siriboon 1999). In the case of Korea, although there is a political move to extend social insurance to cover long-term care, the residential service is still limited and primarily targeted to the low-income elderly (Chung 2000).

Measures to provide benefits for the family members of the elderly, on the other hand, are found in most of the five countries. In Singapore, children who live with aged parents can receive higher income tax relief. Japan issued the Child Care and Family Care Leave Act in 1995 to allow a three-month leave period to care for not only children but also the aged. The Chinese pension system includes the provision of funeral costs for the remaining family members. In Korea, government employees who take care of their elderly parents can receive tax reductions, housing loans and monthly allowances (Cheung 1994; Du 1999; Chung 2000; Kojima 2000). These measures underline the political will to emphasize either traditional family care of the aged or a return to family care.

### **Policy implications and scope for further study**

This paper has described the demographic dynamics of the five low-fertility countries in East and Southeast Asia. It has revealed that declining fertility and mortality resulting in lower population growth rates and population ageing have emerged as new policy issues challenging these countries. Owing to low fertility and increased longevity, these countries will have declining as well as older populations. Evidence from European countries shows that, although fertility may rebound, in most countries it is highly unlikely to recover sufficiently to reach replacement level in the near future (United Nations 2000). Mortality reduction, which continues to be an overriding policy goal, will further enhance the ageing process. The implications of population ageing and the associated growth in the proportion and size of elderly populations are of particular concern and often perceived as posing serious burdens for economic and social support and healthcare. The rising number of old people on the one hand, and the declining number of the younger population on the other, will also mean that there will be a shortage of caregivers for the old.

In order to cope with the problems of a sustained low-fertility trend, several implications for policy can be drawn from the current study. First, the countries that are rapidly ageing but which do not have sufficient national social security for the aged will need to find a way to secure the lives of old people. The ESCAP studies suggest that the majority of the elderly in Thailand and China live with their adult children. The continued trends of low fertility and other indicators associated with population ageing, however, do not look promising for the ability of families to take care of the elderly in the future. Though the elderly may continue to live with at least one adult child, this does not necessarily imply that they will have the financial security, medical care or lifestyle they desire. In order to reduce the increasing burdens on the family to care for the elderly, governments can play a major role in providing a financial basis for the elderly.

However, it should also be noted that the provision and expansion of pension

systems in developing countries entail great financial as well as administrative burdens for the governments. Thus, there are increasing calls from researchers to urge governments to start preparing for policy measures to deal with ageing problems as soon as possible (Mason, Lee and Russo 2002). It is important that even intermediate- and high-fertility countries should recognize the significance of ageing problems and start formulating policies for the elderly. Some countries are already preparing to address the issue of population ageing. For example, Mongolia's population policies not only aim to provide welfare benefits to the elderly but also focus on strengthening relationships and knowledge sharing between different generations (Krishnamurty 2000). Recognizing the problems of the aged, the Indonesian government has developed welfare policies which include the creation and expansion of employment opportunities for them, discounts on goods and services for senior citizens as well as families with elderly members, and the promotion of old-age savings and insurance (Wirakartakusumah 1999).

Second, even governments that already have a social security system for the elderly are facing the emerging problems of caring for the frail aged, who may have financial resources to support themselves, but need day-to-day physical care. Although the policy trends of the five governments seem to lean toward home-based community care, day-to-day care requires heavy investments of time and labour from supporting family members. Furthermore, the caregivers are usually women, who are caught between the responsibilities of raising children, caring for ageing parents and engaging in economic activities (United Nations 2001c). Thus, more intensive and practical government supports are necessary to meet the needs of the frail aged with a declining number of children, and special attention needs to be paid to the increasing numbers of aged women who are financially and physically disadvantaged.

In addition, policy measures need to address the needs of the elderly who are in particularly troubled situations. For example, the rising incidence of HIV/AIDS has affected the lives of aged parents who provide care for their HIV-infected adult children and, ultimately, take responsibility for rearing the grandchildren left behind. A study on the caregiving situation for HIV patients in Thailand (Saengtienchai and Knodel 2002) indicates that aged parents are heavily involved in caring for their adult children, including the provision of medical supplies, food, shelter and moral support. While these parents are willing to care for their children, the financial costs and the physical demands of caring for terminally-ill patients place tremendous pressure on elderly parents, who themselves may not always be healthy or economically active. Moreover, aged parents often assume the major responsibilities of raising grandchildren who move in along with their sick mother or father and, after the death of their parent, will remain looked after by the old grandparents. Therefore, in light of this epidemic, it is imperative that governments formulate measures to alleviate the negative effects of HIV/AIDS on the lives of the elderly. Such measures should include the provision of special financial aid to cover medical expenses and school subsidies for children who have lost their parents and are being cared for by their grandparents.

Third is the desire and the need for continued employment expressed in all five low-fertility countries. The governments of Japan, Korea and Singapore have been trying to raise the retirement age to compensate for the increasing national expenditures on the elderly (Cheung 1994; Cho 2001; Zoubanov 2001). The elderly them-

selves also seem to be willing to accept continued employment, mainly to maintain good health and spirits, and obtain income (Katsumata 2001). In China and Thailand, a significant percentage of the elderly have an unmet desire to work for income (Du 1999; Wongsith and Siriboon 1999). Thus, it is important for governments to redesign more flexible work environments where the elderly can be meaningfully employed.

In order to understand fully the consequences of low fertility, more research is needed, especially in the following areas. First, the diversity of the older population and their different needs should be examined more closely. Like any other population, the aged are a heterogeneous category of people; not only are there differences between the sexes, but the elderly from different social classes, residential areas, and birth cohorts also have different characteristics. Bongaarts and Zimmer (2001) found that levels of schooling had significant effects on the living arrangements of the elderly in the developing countries that participated in demographic and health surveys. The levels of schooling are positively correlated with the proportion of old people living alone; higher educational levels are associated with smaller households, and with fewer children and other adults in the household. To formulate more effective measures, there is a need for studies focusing on conditions of the elderly in different segments of society. Second, there is a need to collect more data on the characteristics of the children's generation because the needs and problems of the elderly are heavily affected by their family members (Bongaarts and Zimmer 2001). Information on the children's generation will also help to draw useful inferences about the aged in the next generation.

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