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Aging in Asia: Trends,
Impacts and Responses

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Abstract

By the middle of this century, Asia's elderly population is projected to reach 922.7 million, and its share of population 17.5%, from just 4.1% in 1950. Within the next few decades, Asia is poised to become the oldest region in the world; reforming policies and creating new structures and institutions to address this challenge is a huge and complex undertaking that requires a big head-start. This paper analyzes the impact that aging is having in Asia, examines the policy options for dealing with the problems it is causing, and outlines how different sub-regions may require different responses.

Keywords: Aging Asia, Asian demographic transition, Asian population trends, Asian population forecasts, aging impact

JEL Classification: J11, J14, J18

“Stop at two!” - Singaporean population slogan in 1972
“Have three, if you can afford it!” Singaporean population slogan in 1987

1. Introduction

In 1950, the elderly in Asia numbered roughly 57.6 million and accounted for no more than 4.1% of the region’s population. By the middle of this century, the elderly population is projected to reach 922.7 million, and their share is expected to rise to 17.5%. Asia accounted for only 44% of the global elderly population in 1950, but by 2050, this share is projected to increase to 62% (UN 2006). Simply put: within the next few decades, Asia is poised to become the oldest region in the world (Table 1).

The demographic transition towards an aging population is more advanced in developed countries like Japan and in People’s Republic of China and the newly-industrialized economies (NIEs)—Hong Kong, China; Republic of Korea (Korea); and Singapore. However, many of the developing countries in the region are on the same demographic path, and they are making the transition at a much faster rate.

A rapidly aging population can have adverse effects on economic performance and prospects through a decrease in the labor force, lower saving and investment rates, and spiraling pension and health care costs. Japan, the PRC, and the NIEs are already wrestling with some, if not all, of these problems. While developing countries in Asia still have a bit of time on their side, they would do well to use that time wisely. Reforming policies and creating new structures and institutions to address aging’s challenges is a huge and complex undertaking, one that requires a big head-start.

As fertility and mortality rates continue to drop, and as the population grows older, many countries in Asia will be forced to re-examine key social and economic policies, if not abandon them altogether. Conservative Japan is now considering revising its immigration laws to deal with its shrinking workforce and aging population (AFP 2008). For close to two decades, Singapore adopted various anti-natalist measures in a bid to keep the birthrate in check, yet by the late 1980s, Singapore’s population slogan had changed from “Stop at two” to “Have three, if you can afford it!”.¹ While these policy reversals in Japan and Singapore may be the most dramatic, they certainly will not be the only countries shifting gears as a result of changing demographics and population aging. Population aging will touch every aspect of our lives, and unless we start making difficult policy choices soon, there is very little chance that Asia will age gracefully.

The paper is organized in 6 sections. Section 2 describes trends in aging in Asia, focusing on differences in timing and speed across sub-regions. In Section 3, we examine the impact of aging on the domestic economy, while Section 4 takes this further by focusing on the peculiar challenges that aging presents to developing countries. Section 5 analyzes the regional interactions taking place among countries that are economically integrated but aging at different speeds, and how these interactions can help mitigate many of the negative impacts that aging will have at the domestic level. Finally, in Section 6, we examine policy options in dealing with the problems caused by aging, and how different sub-regions may require different responses.

¹ More recently, the International Herald Tribune (2008) reported that, apart from government-sponsored dating matchmaking programs such as tea dances and moonlight cruises, courses in falling in love are now being offered in Singaporean polytechnic institutes.

2. The Graying of Asia

Between 1950 and 1975, although the number of elderly persons increased by nearly 70% from 57.6 million to 97.7 million, their share in Asia's total population was constant at 4.1%. Asia was a young region then: the population share of those aged 14 and below rose from 36.2% in 1950 to 39.7% in 1975, and the median age declined from 22 to 20 years during the same period. The old-age dependency ratio in 1975 was a mere 6.8. By 2005, however, Asia's demographic landscape had changed completely. The share of the elderly, the median age, and the old-age dependency ratio were on the rise, while the youngest base of the population had stopped expanding. Projections show that this trend is irreversible: by 2050, Asia will have some 922.7 million elderly, comprising 17.5% of the population. Median age will rise to 40.2 years, and the old-age dependency ratio will increase to 38.8 (UN 2006).

Although Asia as a whole is expected to age within the first half of this century, there are marked differences in timing and speed among sub-regions. East Asia will age fastest, while Western Asia will age slowest. These differences can also be observed among countries (Tables 2A and 2B).

Japan is, and will remain, the oldest country in the region. By 2050, nearly two out of every five Japanese will be 65 years or older. Rising old age dependency caused Japan's total dependency rate to rise in 2005. That same year, total dependency rates bottomed out in the PRC; Hong Kong, China; Republic of Korea; and Singapore. These countries will remain far along the aging curve.

For most of Asia, however, populations remain very young, and over the next two decades, a bulge in the size of the working age population will occur. Overall dependency rates will fall, and a demographic window will emerge, with the potential for higher employment, savings, investment, and economic growth. Table 3 identifies the starting dates for entering the demographic window, for a number of key Asian developing countries.

Canning (2007) argues that East Asia's strong macroeconomic performance is closely linked to its demographic transition and resulting changes in the age structure. He cites estimates which attribute as much as a third of the sub-region's economic miracle to the demographic window. However, he emphasizes that the benefits presented by this demographic window will not come automatically. As he writes, "Whether or not this potential is captured depends on the policy environment, as reflected, for example, by the quality of governmental institutions, labor legislation, macroeconomic management, openness to trade, and education policy." As such, unless the proper policies and institutions are in place, a diametrically opposite situation could arise, raising the potential for significant levels of unemployment and related social problems.

This is a critical issue, since fertility declines and population aging in developing countries have been proceeding at a much faster rate. Globally, more than half of the elderly were in developed regions up until 1975, but by 2005, this trend had been reversed. Within the next four decades, the elderly in developing countries are expected to account for a staggering 78% of the total—that's 1.17 billion people by 2050 (Table 1). In Asia, more than half of the region's elderly population will be outside Japan, the PRC, and the NIEs by 2050 (UN 2006).

3. Aging and its Afflictions: Impacts on the Domestic Economy

What will be the implications of aging on Asian economies? The impacts of aging on pension systems and health care have received the most attention to date, and are probably the best understood. However, it is becoming increasingly clear that aging's impact will go beyond these two sectors, and that aging will have huge and lasting implications on almost every aspect of the domestic economy.

Both Canning (2007) and Horioka (2007) trace out some of the macroeconomic consequences of a change in age structure through its life cycle effects on labor supply and income, household savings, and consumption. These effects include, among others, a likely contraction in the labor supply, declines in savings and investment rates, and slower economic growth, assuming the growth rate of total factor productivity remains constant. Horioka (2007), in particular, presents empirical evidence from multiple-country studies, time series studies for individual countries, and micro-evidence from household surveys which demonstrate that aging can have a significant negative impact on household and private savings rates.

Canning (2007) and Horioka (2007) also briefly examine the implications of aging on pension systems, and transfer systems more generally. They look at how the scenarios may play out under two different transfer systems: (i) unfunded pay-as-you-go (PAYG) systems, where retirees' benefits are taken out of current workers' contributions or current income, and (ii) funded pensions, where the benefits are paid out of financial assets built over the years from workers' contributions. Both authors arrive at the conclusion that excessively generous, universal PAYG schemes with early retirement incentives are likely to be more counterproductive than helpful. These significantly reduce labor market participation of older workers, impose huge fiscal costs, depress government and national savings, and undermine intergenerational equity. In contrast, funded pensions increase savings and preserve intergeneration equity.

Canning (2007) refers to the foregoing impacts as the "accounting effects" of aging, where age-specific behavior remains constant and all of the effects are presumed to arise from the change in the age structure. But he correctly points out that population aging can also change age-specific behavior; he cites how lower fertility rates can lead to higher female participation in the labor force, or how longer life spans can lead to longer working lives. This opens up the possibility of using incentives to promote behavior that would maximize aging's benefits and minimize its costs.

4. Aging in Developing Countries: Going Over the Hill Before Getting to the Top?

In many of the aging developed countries, the domestic impacts described above have already started to play out. Developing countries are likely to face similar challenges as they undergo the same demographic transition. However, as Canning (2007) points out, population aging in developing countries is likely to prove even more difficult, for a number of reasons.

First of all, given the speed at which they are aging, many developing countries in the region face the prospect of aging at low levels of income. Put another way, they risk going over the hill before getting to the top. Estimates by the Asian Development Bank (ADB) (2002) reveal that in 1970, the typical country with an old-age dependency ratio of 0.15 had a per capita gross national product (GNP) of \$26,000. But ADB (2002) projections suggest that in 2025, a typical country

with an old-age dependency ratio of 0.15 will have a per capita GNP of only \$3,800—that's 85% less compared with 1970. Clearly, much depends on the extent to which developing countries are able to take advantage of the demographic window, and increase per capita incomes before aging sets in. A recent report by the ADB (2008), however, warns that developing countries are in danger of squandering this singular opportunity: At present, only about 60% of young men and 40% of young women are employed in developing Asia, the majority of whom are in informal and insecure jobs with poor working conditions. There is a dearth of skilled and qualified workers, particularly in areas that are critical for growth in a modern economy. Meanwhile, a restrictive business environment, limited access to finance, and rigid labor regulations continue to stymie the growth of formal sector employment.

Second, the elderly in Asia have traditionally relied on filial resources for old-age support, but the extent to which they can continue to do so has become increasingly uncertain. As extended family networks wane and more modern ideas about marriage, family, and individualism take hold, the fastest growing segment of the population will have no other recourse but to turn to public or private institutions for support. However, only a small number of developing countries in Asia currently have such systems in place. Not all of these provide universal coverage, and some are of the PAYG variety (see Canning 2007). The Singaporean government has tried to address this problem by making it the legal obligation of children to take care of their aging parents, but other countries may not be as willing or able to take this approach.

Third, while aging in developed countries has been accompanied by significant improvements in health, it is unclear whether aging in developing countries will likewise involve healthy seniors. Apart from the obvious implications this will have on private and public health care expenditures, unhealthy aging would also significantly hinder the elderly from staying productive in their golden years. This will prove particularly disastrous for the low-income poor, who are typically forced to continue working and fend for themselves in the absence of filial or state-provided support systems.

5. Aging Apart, Together: Regional Interactions

Focusing on the domestic implications of aging is likely to leave one with a very bleak outlook, but we need to keep in mind that countries in Asia are not aging all at the same time. Economic interactions are expected to take place among countries that are economically integrated but aging at different speeds; these interactions can help mitigate many of the negative impacts that aging will have at the domestic level.

Bryant (2007) describes how the domestic effects of aging could be influenced by cross-border transactions, and emphasizes that failure to take into account the macroeconomic effects working through exchange rates and cross-border flows could lead to an inaccurate assessment of the net impact of demographic change. Bryant (2007) describes how macroeconomic interactions in response to heterogeneous demography can alter the relative sizes of economic activity in nations and regions, and explains how outputs, capital stocks, and consumption could be redistributed across borders, with major consequences for the relative welfare of nations.

Meanwhile, Horioka (2007) shows that while aging is expected to lead to a decline in national saving rates, the prospects are less worrisome when regional and global interactions come into play. Since the population aging process is proceeding at different speeds in different countries, declines in household and private saving rates can be expected to begin at different times and

proceed at different speeds in different countries, providing countries with the option to borrow from each other. This prevents the danger of a region-wide or worldwide collapse in saving rates in the near future.

We are already seeing countries take advantage of diversities in demographic profiles to facilitate their own macroeconomic adjustment processes. Asymmetric demographics partially explain changes in the patterns of trade in goods and services, financial capital flows, and labor mobility. Aging capital surplus countries with shrinking labor pools are exporting capital to younger, capital deficit countries with surplus labor. We have watched this phenomenon of capital chasing labor happen for more than two decades between aging Asian countries such as Japan and Korea and the younger countries in Southeast Asia.

To a lesser extent, demographic differences have also facilitated labor migration across Asia. The ADB's Asian Development Outlook for 2008 reveals the extent to which certain Asian economies have become reliant on migrant workers; citing data which show that the proportion of foreign workers in the mid-1990s exceeded 6% of the labor forces in Hong Kong, China, Malaysia, and Thailand, while the share of nonresidents in Singapore's economically active population rose from 18% in 1991 to 27.5% in 2006.

With growing global cooperation and integration, we can expect such open economy interactions to play an increasing role in mitigating labor and capital market imbalances caused by demographic changes. Initiatives such as the ASEAN+3, which bring together aging and younger countries within a very broad framework, should prove instrumental in facilitating such interactions.

6. Aging Gracefully: Policy Options for Asia

Clearly, the aging problem is not one of longer life spans and falling fertility rates, but of inappropriate institutions and behaviors. To prevent an "aging crisis" in Asia, policymakers need to start refashioning their institutions and policies to influence behavior, and they need to do so quickly. This goes without saying for countries that are far ahead of the aging curve. But developing countries also need to start preparing themselves now to ensure that their economies and institutions are capable of supporting an aging population.

In the case of Japan, the PRC and the NIEs, where aging is relatively advanced, the biggest challenge will involve sustaining output growth and preventing a decline in standards of living, despite a contraction in the labor supply. There are a number of ways that aging countries can make up for labor shortfalls. Where possible, labor force participation rates could be increased. This will mean, among other things, exploring education reforms to facilitate the entry of young adults into the labor force; removing barriers to the participation of women; and increasing the mandatory retirement age, or scrapping it altogether.

Improvements in labor productivity will also be necessary, compelling reforms in education and greater investments in technology. At present, however, there is a dearth of research on this issue, and it is difficult to say how much of an increase in labor productivity will be required to compensate for the shrinking labor force. More research is also needed on age-specific productivity and how best to influence the same through public policy, particularly if we want increase the productivity of older workers and promote active aging (Borsch-Supan 2004).

As illustrated in the previous section, aging countries could also use regional interactions as a way of getting around labor shortages, by allowing greater migration or immigration, or continuing to export capital to countries with a youth bulge. In the immediate future, the second option may prove to be the easier alternative. Asian countries have made considerable progress in removing restrictions to capital flows, whereas liberalizing labor flows continues to be fraught with controversy. Cross-border labor flows might play a more important role in the future, but the challenge continues to be overcoming the various political and social barriers that stand in the way of greater labor mobility. In the meantime, more consideration will have to be given to the kind of effects this might have on macroeconomic outcomes as well as welfare outcomes, particularly for sending developing countries.

In the area of pension reforms, one unambiguous conclusion from the literature is the need to find more sustainable alternatives to unfunded, PAYG systems. Where possible, moving to funded pensions should be considered. To reduce the costs and possible inequities associated with such a move, Horioka (2007) recommends issuing very long-term government bonds to finance unfunded liabilities, and gradually maturing these bonds over several generations. However, one should bear in mind that moving to funded pensions will not make much of a difference if they are mismanaged or if their sustainability is compromised by the lack of macroeconomic stability or proper regulation (Barr 2006 and Barr and Diamond 2006).

Where such a move proves unfeasible, policymakers could consider creating voluntary personal accounts or provident funds as supplements to PAYG systems. PAYG systems can also be redesigned. One way to do this would be to shift to a notional defined contribution system, which establishes a direct link between contributions and benefits. The use of automatic benefit stabilizers, where benefits are indexed to demographics instead of wages, could also be explored (Jackson 2006).

For developing countries, the biggest challenge lies in adopting policies that will allow them to utilize the demographic window to achieve rapid economic growth, increase per capita incomes, and build up human capital. Central to meeting this challenge is providing productive employment and enhancing the skills of the growing labor force. Many developing countries have already started adopting reforms toward this end, but as the discussion in Section 4 clearly emphasized, considerable gaps exist.

Addressing these gaps takes on greater importance if developing countries are to benefit from cross-border movements in goods, capital, and labor in response to population aging elsewhere in the region or the rest of the world. The challenge then for countries is to ensure that their macroeconomic management, investment climate, infrastructure, and legal and administrative systems continue to improve so that they can attract capital from capital-surplus aging countries. Developing countries also need to increase investment in education and health to improve the quality of their workforce. This will not only help facilitate the inflow of capital, but the outflow of labor as well, to aging countries that encourage the entry of foreign workers.

Developing countries should take advantage of the time they have left to strengthen existing transfer and pension systems, or establish such systems where they are non-existent. The options outlined above for aging countries would be relevant for younger developing countries as well. More importantly, developing countries need to put in place the right incentives and institutions to encourage savings for retirement and ensure that these savings are used productively.

References

- Asian Development Bank. 2008. *Asian Development Outlook 2008*. Manila: ADB.
- . 2002. *Key Indicators 2002: Population and Human Resource Trends and Challenges*. Manila: ADB.
- Agence France-Presse. 2008. Japan Looks to Immigrants as Population Shrinks: Report. 5 May.
- Barr, N. 2006. Pensions: Overview of the Issues. *Oxford Review of Economic Policy*. 22(1). pp. 1–14.
- Barr, N. and P. A. Diamond. 2006. The Economics of Pensions. *Oxford Review of Economic Policy*. 22(1). pp. 15–39.
- Borsch-Supan, A. H. 2004. Global Ageing: Issues, Answers, More Questions. *Michigan Retirement Research Center Research Paper No. 2004-084*.
- Bryant, R. 2007. Cross-Border Dimensions of Population Ageing. Paper presented at the seminar on Ageing Asia: A New Challenge for the Region. ADB Annual Meeting. Kyoto, Japan.
- Canning, D. 2007. The Impact of Ageing on Asian Development. Paper presented at the seminar on Ageing Asia: A New Challenge for the Region. ADB Annual Meeting. Kyoto, Japan.
- Horioka, C. Y. 2007. Ageing, Saving, and Fiscal Policy. Paper presented at the seminar on Ageing Asia: A New Challenge for the Region. ADB Annual Meeting. Kyoto, Japan.
- International Herald Tribune*. 2008. Singapore Succeeds at Managing Everything - Except Dating. 29 April.
- Jackson, R. 2006. The Developed Country Experience: Lessons for an Ageing East Asia. Paper presented at the International Conference on Ageing East Asia: Policy Responses and Regional Cooperation. Tokyo, Japan. 1 June.
- . 2006. *World Population Prospects: The 2006 Revision*. New York: United Nations.
- . 2004. *World Population to 2300*. New York: United Nations.

Table 1: Aging Trends by Region 1950, 1975, 2005, 2025 and 2050 (Medium Variant)

Country or Area	Population aged 65 or over (thousands)					% of Population aged 0-14					% of Population aged 65 or over					Median Age					Old-Age Dependency Ratio				
	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050
	World	130,847	228,834	477,358	838,702	1,492,055	34.2	36.8	28.3	24.1	19.8	5.2	5.6	7.3	10.5	16.2	23.9	22.4	28.0	32.7	38.1	8.5	9.8	11.4	16.0
More developed regions	64,119	112,896	185,644	260,996	325,560	27.4	24.2	17.0	15.6	15.2	7.9	10.8	15.3	20.7	26.1	29.0	31.1	38.6	43.0	45.7	12.2	16.6	22.6	32.6	44.6
Less developed regions	66,729	115,939	291,714	577,707	1,166,495	37.4	41.2	30.9	25.7	20.6	3.9	3.8	5.5	8.6	14.7	21.5	19.4	25.5	30.8	36.9	6.6	7.0	8.7	13.0	22.7
Least developed countries	7,328	10,787	24,938	48,576	119,825	41.2	44.6	41.5	36.5	28.2	3.7	3.0	3.3	4.1	6.9	19.5	17.6	19.0	22.1	27.9	6.6	5.7	5.9	6.9	10.6
Africa	7,307	13,176	31,259	58,623	138,491	41.8	44.9	41.4	36.3	28.0	3.3	3.2	3.4	4.2	6.9	19.1	17.5	19.0	22.1	28.0	5.9	6.1	6.1	7.1	10.6
Asia	57,625	97,689	250,432	483,293	922,739	36.2	39.7	28.0	22.6	18.0	4.1	4.1	6.4	10.1	17.5	22.2	20.2	27.6	33.6	40.2	6.8	7.3	9.7	15.0	27.2
China, People's Rep. of	24,851	40,830	100,464	197,382	333,668	33.5	39.5	21.6	18.0	15.3	4.5	4.4	7.7	13.7	23.7	23.9	20.6	32.5	39.4	45.0	7.2	7.8	10.8	20.0	38.8
Europe	45,045	77,657	116,232	148,345	183,223	26.2	23.7	15.9	14.7	14.6	8.2	11.5	15.9	20.7	27.6	29.7	32.1	38.9	44.2	47.3	12.5	17.7	23.3	32.1	47.7
Latin America and the Caribbean	5,832	13,755	35,007	71,040	142,521	40.2	41.3	29.8	23.1	18.0	3.5	4.2	6.3	10.3	18.5	20.0	19.3	26.0	32.5	40.1	6.2	7.8	9.8	15.5	29.2
Northern Europe	8,048	12,119	15,242	20,847	26,233	23.7	23.3	18.0	17.0	16.1	8.2	10.3	12.3	18.1	21.5	29.8	28.7	36.3	38.7	41.5	12.7	15.9	18.4	28.6	35.0
Oceania	938	1,560	3,430	6,255	9,458	29.9	31.3	24.9	21.3	18.4	7.3	7.3	10.3	15.1	19.4	28.0	25.6	32.3	36.2	40.0	11.7	11.9	15.8	23.7	31.2

Source: UN 2006

Table 2A: Aging Trends in Asia: Shift in Demographic Groups, 1950, 1975, 2005, 2025 and 2050 (Medium Variant)

Country or Area	Population Aged 65 or over (thousands)					% of Population aged 65 or older					% of Population aged 0-14				
	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050
	World	130,847	228,834	477,358	838,702	1,492,055	5.16	5.61	7.33	10.47	16.23	34.16	36.82	28.32	24.10
Asia	57,625	97,689	250,432	483,293	922,739	4.09	4.08	6.36	10.11	17.52	36.22	39.73	28.04	22.56	17.96
Eastern Asia	29,903	51,441	133,231	247,696	395,319	4.46	4.69	8.75	14.98	24.84	34.21	37.84	20.89	17.31	14.90
South-Eastern Asia	6,767	11,675	30,189	62,122	134,929	3.80	3.62	5.41	9.05	17.60	38.54	42.28	29.34	22.50	17.91
South-Central Asia	18,707	30,307	77,230	153,973	342,469	3.66	3.47	4.69	7.17	13.50	37.80	40.87	33.56	26.03	19.46
Western Asia	2,248	4,266	9,781	19,501	50,021	4.39	4.21	4.61	6.65	13.45	38.70	42.37	33.10	26.99	20.89

Table 2A continued

Country or Area	Population Aged 65 or over (thousands)					% of Population aged 65 or older					% of Population aged 0-14				
	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050
Selected ADB Member Countries															
Afghanistan	210	313	555	1,071	2,695	2.57	2.35	2.21	2.28	3.39	42.65	44.58	46.97	44.09	33.70
Armenia	113	164	365	457	590	8.34	5.81	12.09	15.73	24.00	33.26	34.34	20.83	17.00	14.23
Azerbaijan	199	316	597	994	1,836	6.87	5.56	7.15	10.45	19.53	32.35	40.03	25.26	20.73	16.42
Bangladesh	2,258	2,283	5,413	12,002	29,762	5.15	2.89	3.53	5.83	11.71	40.40	44.26	35.18	27.63	20.79
Bhutan	4	10	30	56	151	2.53	2.66	4.64	6.88	16.19	43.84	41.41	32.98	23.64	17.86
Brunei Darussalam	2	6	12	40	101	4.89	3.54	3.15	7.60	14.80	36.42	40.11	29.59	22.14	18.62
Cambodia	118	199	435	979	2,449	2.71	2.80	3.11	5.02	9.75	42.22	42.25	37.59	30.02	22.07
China, People's Republic of	24,851	40,830	100,464	197,382	333,668	4.48	4.40	7.65	13.65	23.68	33.54	39.49	21.61	17.99	15.29
Democratic People's Republic of Korea	262	253	2,010	2,765	4,452	2.69	1.57	8.51	10.96	18.05	47.89	38.40	24.17	19.29	16.59
Georgia	356	419	640	711	814	10.10	8.53	14.31	18.03	25.96	26.85	28.36	18.89	15.20	13.54
Hong Kong, China	49	237	846	1,801	2,932	2.50	5.40	11.98	21.69	32.65	30.35	30.35	15.12	11.42	11.22
India	11,666	21,090	56,455	111,912	239,822	3.14	3.44	4.98	7.73	14.46	37.48	40.08	32.98	24.80	18.22
Indonesia	3,150	4,409	12,474	24,370	55,124	3.96	3.26	5.52	8.99	18.57	39.17	41.79	28.38	21.18	17.48
Japan	4,135	8,790	25,255	35,835	38,632	4.94	7.88	19.75	29.47	37.69	35.45	24.31	13.88	11.06	11.26
Kazakhstan	438	801	1,214	1,757	2,956	6.53	5.67	7.98	10.34	17.07	34.36	34.63	24.24	22.90	18.55
Kyrgyzstan	142	196	306	463	974	8.18	5.93	5.87	7.46	14.84	28.90	39.87	31.03	24.39	18.49
Lao People's Democratic Republic	33	89	198	365	986	2.18	3.08	3.50	4.74	10.61	39.27	43.49	39.80	29.38	19.94
Malaysia	309	457	1,117	2,949	6,463	5.06	3.73	4.35	8.73	16.31	40.90	42.09	31.39	23.57	18.28
Maldives	4	6	11	22	68	5.09	4.40	3.82	5.40	13.32	33.05	41.81	34.01	27.49	19.74
Mongolia	25	42	101	198	589	3.32	2.93	3.93	6.37	17.38	41.90	43.75	28.89	22.00	17.28
Myanmar	578	1,264	2,685	5,134	11,104	3.37	4.24	5.60	9.27	18.91	34.24	41.17	27.25	20.66	17.07
Nepal	355	463	991	1,962	4,864	4.11	3.42	3.66	5.05	9.37	38.36	41.54	38.96	30.97	23.08
Pakistan	1,975	2,349	6,158	12,560	31,609	5.35	3.44	3.90	5.58	10.82	37.94	42.54	37.16	30.01	21.82
Philippines	718	1,291	3,232	7,482	18,177	3.59	3.07	3.82	6.46	12.94	43.59	44.21	36.16	27.81	19.68
Republic of Korea	574	1,273	4,519	9,603	14,871	3.05	3.61	9.44	19.59	35.13	41.66	37.75	18.64	12.25	10.40
Singapore	24	93	368	1,161	1,650	2.40	4.11	8.50	22.76	32.84	40.47	32.83	19.54	12.45	11.12

Table 2A continued

Country or Area	Population Aged 65 or over (thousands)				% of Population aged 65 or older				% of Population aged 0-14						
	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050
Sri Lanka	262	576	1,241	2,796	4,104	3.58	4.22	6.49	13.75	21.93	40.88	37.53	24.17	19.79	16.70
Tajikistan	67	161	255	442	1,118	4.36	4.67	3.89	4.95	10.39	33.81	45.41	39.35	30.03	20.14
Thailand	669	1,520	4,912	10,281	15,683	3.25	3.60	7.80	14.94	23.28	42.13	42.26	21.68	17.91	15.83
Turkmenistan	71	113	226	408	981	5.86	4.47	4.67	6.72	14.48	32.82	43.46	31.78	24.12	18.44
Uzbekistan	352	775	1,261	2,262	5,494	5.58	5.54	4.74	6.66	14.31	31.68	43.34	33.18	24.48	18.35
Viet Nam	1,152	2,329	4,729	9,293	23,024	4.21	4.85	5.56	8.74	19.19	31.75	43.11	29.63	21.89	17.21

Source: UN 2006

Table 2B: Aging Trends in Asia: Rise in Median Age and Dependency Ratios, 1950, 1975, 2005, 2025 and 2050 (Medium Variant)

Country or Area	Median Age					Old Age Dependency Ratio					Total Dependency Ratio				
	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050	1950	1975	2005	2025	2050
World	23.93	22.38	27.97	32.74	38.09	8.51	9.75	11.39	16.00	25.40	64.81	73.71	55.40	52.83	56.45
Asia	22.16	20.24	27.58	33.64	40.16	6.84	7.26	9.69	15.02	27.16	67.53	77.99	52.43	48.54	54.99
Eastern Asia	23.47	21.57	33.45	40.40	45.85	7.28	8.16	12.44	22.12	41.23	63.07	74.00	42.13	47.68	65.96
South-Eastern Asia	20.60	18.60	25.99	32.94	40.20	6.59	6.69	8.30	13.23	27.29	73.42	84.83	53.27	46.09	55.06
South-Central Asia	21.15	19.35	23.17	29.27	37.21	6.25	6.24	7.60	10.74	20.14	70.83	79.66	61.94	49.72	49.17
Western Asia	20.46	18.75	23.90	29.16	35.83	7.72	7.89	7.40	10.03	20.48	75.73	87.22	60.55	50.70	52.28
Selected ADB Member Countries															
Afghanistan	18.60	17.65	16.41	17.73	22.97	4.70	4.42	4.36	4.26	5.39	82.55	88.41	96.80	86.47	58.98
Armenia	22.42	21.87	31.69	38.88	48.59	14.28	9.71	18.02	23.38	38.85	71.24	67.09	49.07	48.65	61.89
Azerbaijan	22.83	19.13	27.74	35.82	42.52	11.31	10.22	10.58	15.19	30.49	64.54	83.79	47.96	45.31	56.12
Bangladesh	20.00	17.67	22.16	27.82	35.06	9.46	5.47	5.76	8.76	17.35	83.66	89.20	63.17	50.29	48.15
Bhutan	17.99	19.59	22.33	31.98	39.89	4.73	4.75	7.44	9.90	24.55	86.47	78.78	60.32	43.92	51.62
Brunei Darussalam	22.37	19.76	26.19	31.54	37.43	8.33	6.29	4.69	10.81	22.23	70.39	77.48	48.69	42.31	50.20
Cambodia	18.74	18.66	20.07	26.64	33.64	4.91	5.09	5.25	7.73	14.30	81.57	81.99	68.64	53.95	46.67
China, People's Republic of	23.94	20.57	32.48	39.40	44.96	7.23	7.84	10.82	19.97	38.81	61.33	78.22	41.37	46.30	63.86

Table 2B continued

Country or Area	Median Age			Old Age Dependency Ratio			Total Dependency Ratio								
	1950	1975	2005	2005	2015	2025	1975	2005	2025						
	1950	1975	2005	2005	2015	2025	1975	2005	2025						
Democratic People's Republic of Korea	15.86	21.19	32.13	36.82	41.87	5.45	2.62	12.65	15.71	27.61	102.34	66.59	48.55	43.37	52.99
Georgia	27.30	28.29	35.50	41.57	49.49	16.02	13.52	21.42	27.01	42.90	58.61	58.45	49.69	49.78	65.28
Hong Kong, China	23.71	23.85	38.87	46.88	52.07	3.72	8.41	16.44	32.42	58.17	48.92	55.65	37.18	49.49	78.17
India	21.26	19.73	23.77	29.88	38.58	5.28	6.08	8.02	11.46	21.48	68.41	77.06	61.18	48.22	48.54
Indonesia	20.02	18.90	26.49	33.77	41.08	6.96	5.93	8.35	12.87	29.03	75.84	81.97	51.27	43.20	56.36
Japan	22.28	30.42	42.91	50.53	54.89	8.30	11.62	29.75	49.55	73.82	67.76	47.47	50.67	68.14	95.88
Kazakhstan	23.20	22.26	28.83	34.14	39.26	11.05	9.49	11.78	15.49	26.52	69.17	67.50	47.55	49.79	55.34
Kyrgyzstan	25.33	19.50	23.89	30.93	38.83	12.99	10.95	9.31	10.95	22.26	58.92	84.51	58.49	46.74	49.99
Lao People's Democratic Republic	20.29	18.02	19.23	26.38	35.53	3.72	5.76	6.16	7.19	15.29	70.79	87.14	76.35	51.78	44.00
Malaysia	19.80	18.55	24.70	31.40	39.30	9.35	6.88	6.77	12.90	24.93	85.03	84.58	55.63	47.71	52.88
Maldives	24.66	18.88	21.28	29.51	36.84	8.23	8.19	6.15	8.05	19.90	61.67	85.91	60.86	49.02	49.38
Mongolia	19.04	18.01	24.20	33.67	40.94	6.07	5.50	5.85	8.89	26.61	82.55	87.55	48.84	39.61	53.07
Myanmar	22.92	19.18	26.78	34.58	41.50	5.40	7.76	8.33	13.23	29.54	60.28	83.15	48.92	42.71	56.21
Nepal	21.06	19.10	20.14	25.35	32.47	7.14	6.21	6.37	7.89	13.88	73.82	81.67	74.27	56.29	48.05
Pakistan	21.25	18.64	20.26	26.80	34.10	9.42	6.37	6.61	8.67	16.06	76.31	85.11	69.64	55.26	48.44
Philippines	18.17	17.60	21.76	27.19	36.28	6.80	5.83	6.37	9.82	19.21	89.33	89.67	66.61	52.13	48.42
Republic of Korea	19.15	19.90	35.05	45.80	54.87	5.51	6.15	13.13	28.74	64.50	80.84	70.53	39.05	46.72	83.60
Singapore	19.98	21.93	37.50	47.19	53.70	4.19	6.53	11.81	35.12	58.60	75.02	58.60	38.96	54.35	78.45
Sri Lanka	19.50	20.72	29.47	37.43	43.38	6.44	7.24	9.36	20.70	35.74	80.05	71.65	44.22	50.48	62.94
Tajikistan	22.33	17.15	19.19	25.91	35.07	7.05	9.36	6.86	7.62	14.96	61.72	100.31	76.20	53.80	43.95
Thailand	18.62	18.52	32.60	39.83	44.28	5.94	6.66	11.05	22.25	38.23	83.08	84.73	41.79	48.92	64.23
Turkmenistan	23.54	17.93	23.32	31.33	38.83	9.55	8.58	7.35	9.72	21.58	63.08	92.04	57.35	44.61	49.07
Uzbekistan	24.12	17.91	22.55	30.61	38.86	8.90	10.84	7.64	9.67	21.25	59.40	95.64	61.08	45.23	48.50
Viet Nam	24.63	18.21	24.88	33.52	41.59	6.57	9.33	8.58	12.59	30.17	56.14	92.18	54.31	44.15	57.23

Source: UN 2006

Table 3: Starting Dates for Entering the Demographic Window, Selected ADB Member Countries

Date	Country	Date	Country
1965	Japan	2015	Philippines
1975	Georgia		Tajikistan
1980	Hong Kong, China	2020	Bangladesh
	Singapore	2030	Lao PDR
1985	Republic of Korea		Nepal
1990	China, People's Rep. of		Bhutan
1995	Kazakhstan	2035	Cambodia
	Sri Lanka		Maldives
	Thailand		Pakistan
2005	Azerbaijan	2050	Afghanistan
	Brunei Darussalam		
	Indonesia		
	Viet Nam		
2010	India		
	Kyrgyzstan		
	Malaysia		
	Mongolia		
	Myanmar		
	Turkmenistan		
	Uzbekistan		

Source: UN 2004

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