

RESEARCH NOTES

Ageing in Asia Trends, Impacts and Responses

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By the middle of this century, Asia's elderly population is projected to reach 922.7 million, and its share of population 17.5 per cent from just 4.1 per cent 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 analyses the impact that ageing is having in Asia; examines the policy options for dealing with the problems it is causing, and outlines how different subregions may require different responses.

Keywords: Ageing population, demographic transition, old-age dependency ratio.

"Stop at two!" — Singaporean population slogan in 1972

"Have three, if you can afford it!" — Singaporean population slogan in 1987

I. Introduction

Within the next few decades, Asia is poised to become the oldest region in the world.

In 1950, the elderly in Asia numbered roughly 57.6 million and accounted for no more than 4.1 per cent of the region's population (Table 1). 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 per cent. Asia accounted

for only 44 per cent of the global elderly population in 1950, but by 2050, this share is projected to increase to 62 per cent (UN 2006).

The demographic transition towards an ageing population is more advanced in developed countries like Japan, the People's Republic of China (PRC) 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 are making the transition at a much faster rate.

A rapidly ageing population can have adverse effects on economic performance and prospects through a decrease in the labour force, lower saving and investment rates, and spiralling

TABLE 1
Ageing Trends by Region 1950, 1975, 2005, 2025 and 2050
(Medium Variant)

<i>Country or Area</i>	<i>Population aged 65 or over (thousands)</i>					<i>% of Population aged 0–14</i>				
	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>
World	130,847	228,834	477,358	838,702	1,492,055	34.2	36.8	28.3	24.1	19.8
More developed regions	64,119	112,896	185,644	260,996	325,560	27.4	24.2	17.0	15.6	15.2
Less developed regions	66,729	115,939	291,714	577,707	1,166,495	37.4	41.2	30.9	25.7	20.6
Least developed countries	7,328	10,787	24,938	48,576	119,825	41.2	44.6	41.5	36.5	28.2
Africa	7,307	13,176	31,259	58,623	138,491	41.8	44.9	41.4	36.3	28.0
Asia	57,625	97,689	250,432	483,293	922,739	36.2	39.7	28.0	22.6	18.0
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
Europe	45,045	77,657	116,232	148,345	183,223	26.2	23.7	15.9	14.7	14.6
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
Northern Europe	8,048	12,119	15,242	20,847	26,233	23.7	23.3	18.0	17.0	16.1
Oceania	938	1,560	3,430	6,255	9,458	29.9	31.3	24.9	21.3	18.4

SOURCE: UN (2006).

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 the challenges of ageing 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 ageing 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

TABLE 1 — *cont'd*

<i>% of Population aged 65 or over</i>					<i>Median Age</i>					<i>Old-Age Dependency Ratio</i>				
<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>
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	25.4
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
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
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
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
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
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
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
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
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
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

the most dramatic, they certainly will not be the only countries shifting gears as a result of changing demographics and population ageing. Population ageing 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 six sections. Section II describes trends in ageing in Asia, focusing on differences in timing and speed across subregions.

In section III, we examine the impact of ageing on the domestic economy, while section IV takes this further by focusing on the peculiar challenges that ageing presents to developing countries. Section V analyses the regional interactions taking place among countries that are economically integrated but ageing at different speeds, and how these interactions can help mitigate many of the negative impacts that ageing will have at the domestic level. Finally, in section VI, we examine

policy options in dealing with the problems caused by ageing, and how different sub-regions may require different responses.

II. The Greying of Asia

Between 1950 and 1975, although the number of elderly persons increased by nearly 70 per cent from 57.6 million to 97.7 million, their share of Asia's total population was constant at 4.1 per cent. Asia was a young region then: the population share of those aged 14 and below rose from 36.2 per cent in 1950 to 39.7 per cent 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 per cent 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 subregions. East Asia will age fastest, while western Asia will age slowest. These differences can also be observed among countries (Tables 3A and 3B).

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 ageing 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 2 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

TABLE 2
Starting Dates for Entering the Demographic Window, Selected ADB Member Countries

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

SOURCE: UN (2004).

attribute as much as a third of the subregion'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, labour 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 ageing in developing countries has 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 per cent of the total — that is 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).

III. Ageing and Its Afflictions: Impacts on the Domestic Economy

What will be the implications of ageing on Asian economies? The impacts of ageing 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 ageing's impact will go beyond these two sectors, and that it 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 labour supply and income, household savings, and consumption. These effects include, among others, a likely contraction in the labour 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 ageing can have a significant negative impact on household and private savings rates.

Canning (2007) and Horioka (2007) also briefly examine the implications of ageing 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 labour 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 ageing, where age-specific behaviour 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 ageing can also change age-specific behaviour. He cites how lower fertility rates can lead to higher female participation in the labour force, or how longer life spans can lead to longer working lives. This opens up the possibility of using incentives to promote behaviour that would maximize ageing's benefits and minimize its costs.

IV. Ageing in Developing Countries: Going Over the Hill before Getting to the Top?

In many of the ageing developed countries, the domestic impacts described above have already

TABLE 3A
Ageing Trends in Asia: Shift in Demographic Groups, 1950, 1975, 2005, 2025 and 2050
(Medium Variant)

<i>Country or Area</i>	<i>Population aged 65 or over (thousands)</i>				
	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>
<i>World</i>	130,847	228,834	477,358	838,702	1,492,055
<i>Asia</i>	57,625	97,689	250,432	483,293	922,739
Eastern Asia	29,903	51,441	133,231	247,696	395,319
South-Eastern Asia	6,767	11,675	30,189	62,122	134,929
South-Central Asia	18,707	30,307	77,230	153,973	342,469
Western Asia	2,248	4,266	9,781	19,501	50,021
<i>Selected ADB Member Countries</i>					
Afghanistan	210	313	555	1,071	2,695
Armenia	113	164	365	457	590
Azerbaijan	199	316	597	994	1,836
Bangladesh	2,258	2,283	5,413	12,002	29,762
Bhutan	4	10	30	56	151
Brunei Darussalam	2	6	12	40	101
Cambodia	118	199	435	979	2,449
China, People's Republic of	24,851	40,830	100,464	197,382	333,668
Democratic People's Republic of Korea	262	253	2,010	2,765	4,452
Georgia	356	419	640	711	814
Hong Kong, China	49	237	846	1,801	2,932
India	11,666	21,090	56,455	111,912	239,822
Indonesia	3,150	4,409	12,474	24,370	55,124
Japan	4,135	8,790	25,255	35,835	38,632
Kazakhstan	438	801	1,214	1,757	2,956
Kyrgyzstan	142	196	306	463	974
Lao People's Democratic Republic	33	89	198	365	986
Malaysia	309	457	1,117	2,949	6,463
Maldives	4	6	11	22	68
Mongolia	25	42	101	198	589
Myanmar	578	1,264	2,685	5,134	11,104
Nepal	355	463	991	1,962	4,864
Pakistan	1,975	2,349	6,158	12,560	31,609
Philippines	718	1,291	3,232	7,482	18,177
Republic of Korea	574	1,273	4,519	9,603	14,871
Singapore	24	93	368	1,161	1,650
Sri Lanka	262	576	1,241	2,796	4,104
Tajikistan	67	161	255	442	1,118
Thailand	669	1,520	4,912	10,281	15,683
Turkmenistan	71	113	226	408	981
Uzbekistan	352	775	1,261	2,262	5,494
Viet Nam	1,152	2,329	4,729	9,293	23,024

SOURCE: UN (2006).

TABLE 3A — *cont'd*

<i>% of Population aged 65 or over</i>					<i>Old-Age Dependency Ratio</i>				
<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>
5.16	5.61	7.33	10.47	16.23	34.16	36.82	28.32	24.10	19.85
4.09	4.08	6.36	10.11	17.52	36.22	39.73	28.04	22.56	17.96
4.46	4.69	8.75	14.98	24.84	34.21	37.84	20.89	17.31	14.90
3.80	3.62	5.41	9.05	17.60	38.54	42.28	29.34	22.50	17.91
3.66	3.47	4.69	7.17	13.50	37.80	40.87	33.56	26.03	19.46
4.39	4.21	4.61	6.65	13.45	38.70	42.37	33.10	26.99	20.89
2.57	2.35	2.21	2.28	3.39	42.65	44.58	46.97	44.09	33.70
8.34	5.81	12.09	15.73	24.00	33.26	34.34	20.83	17.00	14.23
6.87	5.56	7.15	10.45	19.53	32.35	40.03	25.26	20.73	16.42
5.15	2.89	3.53	5.83	11.71	40.40	44.26	35.18	27.63	20.79
2.53	2.66	4.64	6.88	16.19	43.84	41.41	32.98	23.64	17.86
4.89	3.54	3.15	7.60	14.80	36.42	40.11	29.59	22.14	18.62
2.71	2.80	3.11	5.02	9.75	42.22	42.25	37.59	30.02	22.07
4.48	4.40	7.65	13.65	23.68	33.54	39.49	21.61	17.99	15.29
2.69	1.57	8.51	10.96	18.05	47.89	38.40	24.17	19.29	16.59
10.10	8.53	14.31	18.03	25.96	26.85	28.36	18.89	15.20	13.54
2.50	5.40	11.98	21.69	32.65	30.35	30.35	15.12	11.42	11.22
3.14	3.44	4.98	7.73	14.46	37.48	40.08	32.98	24.80	18.22
3.96	3.26	5.52	8.99	18.57	39.17	41.79	28.38	21.18	17.48
4.94	7.88	19.75	29.47	37.69	35.45	24.31	13.88	11.06	11.26
6.53	5.67	7.98	10.34	17.07	34.36	34.63	24.24	22.90	18.55
8.18	5.93	5.87	7.46	14.84	28.90	39.87	31.03	24.39	18.49
2.18	3.08	3.50	4.74	10.61	39.27	43.49	39.80	29.38	19.94
5.06	3.73	4.35	8.73	16.31	40.90	42.09	31.39	23.57	18.28
5.09	4.40	3.82	5.40	13.32	33.05	41.81	34.01	27.49	19.74
3.32	2.93	3.93	6.37	17.38	41.90	43.75	28.89	22.00	17.28
3.37	4.24	5.60	9.27	18.91	34.24	41.17	27.25	20.66	17.07
4.11	3.42	3.66	5.05	9.37	38.36	41.54	38.96	30.97	23.08
5.35	3.44	3.90	5.58	10.82	37.94	42.54	37.16	30.01	21.82
3.59	3.07	3.82	6.46	12.94	43.59	44.21	36.16	27.81	19.68
3.05	3.61	9.44	19.59	35.13	41.66	37.75	18.64	12.25	10.40
2.40	4.11	8.50	22.76	32.84	40.47	32.83	19.54	12.45	11.12
3.58	4.22	6.49	13.75	21.93	40.88	37.53	24.17	19.79	16.70
4.36	4.67	3.89	4.95	10.39	33.81	45.41	39.35	30.03	20.14
3.25	3.60	7.80	14.94	23.28	42.13	42.26	21.68	17.91	15.83
5.86	4.47	4.67	6.72	14.48	32.82	43.46	31.78	24.12	18.44
5.58	5.54	4.74	6.66	14.31	31.68	43.34	33.18	24.48	18.35
4.21	4.85	5.56	8.74	19.19	31.75	43.11	29.63	21.89	17.21

TABLE 3B
Ageing Trends in Asia: Rise in Median Age and Dependency Ratios, 1950, 1975, 2005, 2025 and 2050
(Medium Variant)

<i>Country or Area</i>	<i>Median Age</i>				
	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>
World	23.93	22.38	27.97	32.74	38.09
Asia	22.16	20.24	27.58	33.64	40.16
Eastern Asia	23.47	21.57	33.45	40.40	45.85
South-Eastern Asia	20.60	18.60	25.99	32.94	40.20
South-Central Asia	21.15	19.35	23.17	29.27	37.21
Western Asia	20.46	18.75	23.90	29.16	35.83
<i>Selected ADB Member Countries</i>					
Afghanistan	18.60	17.65	16.41	17.73	22.97
Armenia	22.42	21.87	31.69	38.88	48.59
Azerbaijan	22.83	19.13	27.74	35.82	42.52
Bangladesh	20.00	17.67	22.16	27.82	35.06
Bhutan	17.99	19.59	22.33	31.98	39.89
Brunei Darussalam	22.37	19.76	26.19	31.54	37.43
Cambodia	18.74	18.66	20.07	26.64	33.64
China, People's Republic of	23.94	20.57	32.48	39.40	44.96
Democratic People's Republic of Korea	15.86	21.19	32.13	36.82	41.87
Georgia	27.30	28.29	35.50	41.57	49.49
Hong Kong, China	23.71	23.85	38.87	46.88	52.07
India	21.26	19.73	23.77	29.88	38.58
Indonesia	20.02	18.90	26.49	33.77	41.08
Japan	22.28	30.42	42.91	50.53	54.89
Kazakhstan	23.20	22.26	28.83	34.14	39.26
Kyrgyzstan	25.33	19.50	23.89	30.93	38.83
Lao People's Democratic Republic	20.29	18.02	19.23	26.38	35.53
Malaysia	19.80	18.55	24.70	31.40	39.30
Maldives	24.66	18.88	21.28	29.51	36.84
Mongolia	19.04	18.01	24.20	33.67	40.94
Myanmar	22.92	19.18	26.78	34.58	41.50
Nepal	21.06	19.10	20.14	25.35	32.47
Pakistan	21.25	18.64	20.26	26.80	34.10
Philippines	18.17	17.60	21.76	27.19	36.28
Republic of Korea	19.15	19.90	35.05	45.80	54.87
Singapore	19.98	21.93	37.50	47.19	53.70
Sri Lanka	19.50	20.72	29.47	37.43	43.38
Tajikistan	22.33	17.15	19.19	25.91	35.07
Thailand	18.62	18.52	32.60	39.83	44.28
Turkmenistan	23.54	17.93	23.32	31.33	38.83
Uzbekistan	24.12	17.91	22.55	30.61	38.86
Viet Nam	24.63	18.21	24.88	33.52	41.59

SOURCE: UN (2006).

TABLE 3B — *cont'd*

<i>Old Age Dependency Ratio</i>					<i>Total Dependency Ratio</i>				
<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>	<i>1950</i>	<i>1975</i>	<i>2005</i>	<i>2025</i>	<i>2050</i>
8.51	9.75	11.39	16.00	25.40	64.81	73.71	55.40	52.83	56.45
6.84	7.26	9.69	15.02	27.16	67.53	77.99	52.43	48.54	54.99
7.28	8.16	12.44	22.12	41.23	63.07	74.00	42.13	47.68	65.96
6.59	6.69	8.30	13.23	27.29	73.42	84.83	53.27	46.09	55.06
6.25	6.24	7.60	10.74	20.14	70.83	79.66	61.94	49.72	49.17
7.72	7.89	7.40	10.03	20.48	75.73	87.22	60.55	50.70	52.28
4.70	4.42	4.36	4.26	5.39	82.55	88.41	96.80	86.47	58.98
14.28	9.71	18.02	23.38	38.85	71.24	67.09	49.07	48.65	61.89
11.31	10.22	10.58	15.19	30.49	64.54	83.79	47.96	45.31	56.12
9.46	5.47	5.76	8.76	17.35	83.66	89.20	63.17	50.29	48.15
4.73	4.75	7.44	9.90	24.55	86.47	78.78	60.32	43.92	51.62
8.33	6.29	4.69	10.81	22.23	70.39	77.48	48.69	42.31	50.20
4.91	5.09	5.25	7.73	14.30	81.57	81.99	68.64	53.95	46.67
7.23	7.84	10.82	19.97	38.81	61.33	78.22	41.37	46.30	63.86
5.45	2.62	12.65	15.71	27.61	102.34	66.59	48.55	43.37	52.99
16.02	13.52	21.42	27.01	42.90	58.61	58.45	49.69	49.78	65.28
3.72	8.41	16.44	32.42	58.17	48.92	55.65	37.18	49.49	78.17
5.28	6.08	8.02	11.46	21.48	68.41	77.06	61.18	48.22	48.54
6.96	5.93	8.35	12.87	29.03	75.84	81.97	51.27	43.20	56.36
8.30	11.62	29.75	49.55	73.82	67.76	47.47	50.67	68.14	95.88
11.05	9.49	11.78	15.49	26.52	69.17	67.50	47.55	49.79	55.34
12.99	10.95	9.31	10.95	22.26	58.92	84.51	58.49	46.74	49.99
3.72	5.76	6.16	7.19	15.29	70.79	87.14	76.35	51.78	44.00
9.35	6.88	6.77	12.90	24.93	85.03	84.58	55.63	47.71	52.88
8.23	8.19	6.15	8.05	19.90	61.67	85.91	60.86	49.02	49.38
6.07	5.50	5.85	8.89	26.61	82.55	87.55	48.84	39.61	53.07
5.40	7.76	8.33	13.23	29.54	60.28	83.15	48.92	42.71	56.21
7.14	6.21	6.37	7.89	13.88	73.82	81.67	74.27	56.29	48.05
9.42	6.37	6.61	8.67	16.06	76.31	85.11	69.64	55.26	48.44
6.80	5.83	6.37	9.82	19.21	89.33	89.67	66.61	52.13	48.42
5.51	6.15	13.13	28.74	64.50	80.84	70.53	39.05	46.72	83.60
4.19	6.53	11.81	35.12	58.60	75.02	58.60	38.96	54.35	78.45
6.44	7.24	9.36	20.70	35.74	80.05	71.65	44.22	50.48	62.94
7.05	9.36	6.86	7.62	14.96	61.72	100.31	76.20	53.80	43.95
5.94	6.66	11.05	22.25	38.23	83.08	84.73	41.79	48.92	64.23
9.55	8.58	7.35	9.72	21.58	63.08	92.04	57.35	44.61	49.07
8.90	10.84	7.64	9.67	21.25	59.40	95.64	61.08	45.23	48.50
6.57	9.33	8.58	12.59	30.17	56.14	92.18	54.31	44.15	57.23

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 ageing 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 ageing, many developing countries in the region face the prospect of ageing 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 US\$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 US\$3,800 — that is 85 per cent 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 ageing 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 per cent of young men and 40 per cent of young women are employed in developing Asia, the majority of whom are in informal and insecure jobs with poor working conditions. Inadequate investments in education have led to a dearth of skilled and qualified workers to support knowledge-based and higher value-added industrialization (Mahani 2008). At 25 per cent, the higher education participation rate in Asia and the Pacific remains way below the 40–50 per cent participation rates considered essential for economic growth; this despite the dramatic rise in the number of higher education students, from 22 million in 1999 to 44 million in 2006 (UNESCO 2009). Meanwhile, a restrictive business environment, limited access to finance, and rigid labour 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 ageing parents, but other countries may not be as willing or able to take this approach.

Third, while ageing in developed countries has been accompanied by significant improvements in health, it is unclear whether ageing in developing countries will likewise involve healthy seniors. Apart from the obvious implications this will have on private and public health care expenditures, unhealthy ageing 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.

V. Ageing Apart, Together: Regional Interactions

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

Bryant (2007) describes how the domestic effects of ageing 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 ageing 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 ageing 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 labour mobility. Ageing capital surplus countries with shrinking labour pools are exporting capital to younger, capital deficit countries with surplus labour. We have watched this phenomenon of capital chasing labour happen for more than two decades between ageing Asian countries such as Japan and Korea and the younger countries in Southeast Asia.²

To a lesser extent, demographic differences have also facilitated labour 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. It cited data which show that the proportion of foreign workers in the mid-1990s exceeded 6 per cent of the labour forces in Hong Kong, China, Malaysia, and Thailand, while the share of non-residents in Singapore's economically active population rose from 18 per cent in 1991 to 27.5 per cent in 2006.

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

VI. Ageing Gracefully: Policy Options for Asia

The foregoing discussion clearly reveals that the ageing problem is not one of longer life spans and falling fertility rates, but of inappropriate institutions and behaviours. To prevent an "ageing crisis" in Asia, policy-makers need to start refashioning their institutions and policies to influence behaviour, and they need to do so quickly. This goes without saying for countries that are far ahead of the ageing curve. But developing countries also need to start preparing themselves now to ensure that their economies and institutions are capable of supporting an ageing population.

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

Improvements in labour productivity will also be necessary, compelling reforms in education and greater investments in technology. At present, however, it is difficult to say how much of an increase in labour productivity will be required to compensate for the shrinking labour force. More research is needed on age-specific productivity and how best to influence the same through public

policy, particularly if we want to increase the productivity of older workers and promote active ageing (Borsch-Supan 2004).

As illustrated in the previous section, ageing countries could also use regional interactions as a way of getting around labour 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 labour flows continues to be fraught with controversy. Cross-border labour 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 labour 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, policy-makers 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 labour force to allow a shift towards higher levels of industrialization. Many developing countries have already started pursuing initiatives towards this end, through greater spending on higher education the adoption of innovations such as open universities and distance education to improve access to higher education, and to promote extensive technology use in education and skills development (UNESCO Asia and Pacific Regional Bureau for Education 2003). However, as the discussion in section IV 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 labour in response to population ageing 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 ageing 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 labour as well, to ageing 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 ageing 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.

NOTES

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1. More recently, the *International Herald Tribune* (2008) reported that, apart from government-sponsored dating matchmaking programmes such as tea dances and moonlight cruises, courses in falling in love are now being offered in Singaporean polytechnic institutes.
2. Between 2006 and 2008, Japan was the third largest source of FDI inflows in ASEAN, accounting for roughly US\$26.2 billion or 14 per cent of the total — more than twice the amount invested by the United States. The Republic of Korea ranked seventh, with roughly US\$5.6 billion, or 3 per cent of the total (ASEAN 2009).

REFERENCES

- ADB. *Asian Development Outlook 2008*. Manila: ADB, 2008.
- . *Key Indicators 2002: Population and Human Resource Trends and Challenges*. Manila: ADB, 2002.
- Agence France-Presse (AFP). “Japan Looks to Immigrants as Population Shrinks: Report”. 5 May 2008.
- ASEAN. “Top ten sources of foreign direct investment inflow to ASEAN”. Jakarta: ASEAN, 2009. Available at <<http://www.aseansec.org/18144.htm>>.
- Barr, Nicholas. “Pensions: Overview of the Issues”. *Oxford Review of Economic Policy* 22, no. 1 (2006): 1–14.
- Barr, Nicholas and Peter A. Diamond. “The Economics of Pensions”. *Oxford Review of Economic Policy* 22, no. 1 (2006): 15–39.
- Borsch-Supan, Axel H. “Global Ageing: Issues, Answers, More Questions”. Michigan Retirement Research Center Research Paper No. WP 2004-084, 2004.
- Bryant, Ralph. “Cross-Border Dimensions of Population Ageing”. Paper presented at seminar on Ageing Asia: A New Challenge for the Region, ADB Annual Meeting, Kyoto, Japan, 2007.
- Canning, David. “The Impact of Ageing on Asian Development”. Paper presented at seminar on Ageing Asia: A New Challenge for the Region, ADB Annual Meeting, Kyoto, Japan, 2007.
- Horioka, Charles Yuji. “Ageing, Saving, and Fiscal Policy”. Paper presented at seminar on Ageing Asia: A New Challenge for the Region, ADB Annual Meeting, Kyoto, Japan, 2007.
- International Herald Tribune*. “Singapore succeeds at manageing everything — except dating”. 29 April 2008.
- Jackson, Richard. “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.
- Mahani Zainal Abidin. “The Impact of Changing Demographics and Need for Human Capital in Asia’s Development”. Remarks delivered at the ADBI Distinguished Speaker Seminar, Tokyo, Japan, 25 March 2008.
- United Nations. *World Population to 2300*. New York: United Nations, 2004.
- . *World Population Prospects: The 2006 Revision*. New York: United Nations, 2004.
- UNESCO. Consultation Meeting on The Impact of the Economic Crisis on Higher Education in Asia and the Pacific, 22–23 October 2009, Bangkok, Thailand. Available at <<http://www.unescobkk.org/education/apeid/news/news-details/article/consultation-meeting-on-the-impact-of-the-economic-crisis-on-higher-education-in-asia-and-the-pacifi-1/>>.
- UNESCO Asia and Pacific Regional Bureau for Education. “Higher education in Asia and the Pacific 1998–2003”. Regional report on progress in implementing recommendations of the 1998 World Conference on Higher Education. Adopted at the Second Session of the Regional Follow-up Committee, Bangkok, Thailand, 25–26 February 2003.

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