Towards Successful Aging in Asia

MILKEN INSTITUTE

Amos Garcia and Perry Wong

Acknowledgments

The authors would like to thank the Milken Institute Center for the Future of Aging (CFA) for their continuing support and dedication to more age-friendly environments around the world: Paul Irving, Chairman of CFA and his team, Arielle Burstein, Caroline Servat, and Sophie Okolo. Special thanks goes to Lena Sun, Alston Ng, and Jun Lei Lee for providing initial background research and early drafts, and to Belinda Chng for feedback on drafts. Finally, the authors would like to thank the communications team, Heather Fields and Ann-Marie Eu, for managing the editorial and design process to produce this report.

About the Milken Institute

We are a nonprofit, nonpartisan think tank determined to increase global prosperity by advancing collaborative solutions that widen access to capital, create jobs, and improve health. We do this through independent, data-driven research, action-oriented meetings, and meaningful policy initiatives.

About the Asia Center

The Milken Institute Asia Center promotes the growth of inclusive and sustainable financial markets in Asia by addressing the region's defining forces, developing collaborative solutions, and identifying strategic opportunities for the deployment of public, private, and philanthropic capital. Our research analyzes the demographic trends, trade relationships, and capital flows that will define the region's future.

CONTENTS

1. OVERVIEW 2
- Introduction 3
- Aging Series Motivation 4
- Towards Successful Aging 6

2. ECONOMIC & SOCIAL CONTEXT OF AGING IN ASIA 7
- Sunrise: The Era of Growth 8
- Social Disruption and Cultural Change 13

3. THE STATE OF ASIA'S AGING COHORT 18
- South Korea 22
- China 26
- Malaysia 32
- Thailand 36
- Vietnam 40
- Call to Action: Enabling Social and Economic Value 43

4. TOWARDS MORE SUCCESSFUL AGING ENVIRONMENTS 48
- Two Components Of Age-Friendly Environments 59
- The Value In Aging 52

5. CONCLUSION 58

6. ABOUT THE AUTHORS 61

5. ENDNOTES 62

Overview

INTRODUCTION

Population aging used to be a demographic phenomenon exclusive to advanced economies. It followed a well-accepted pattern. Protracted periods of economic growth allowed advanced, but aging societies to accumulate national wealth and personal savings simultaneously. Public programs were established to provide an ecosystem of health-care services and social protection schemes to meet the basic needs of their citizens during their working lives and retirement.

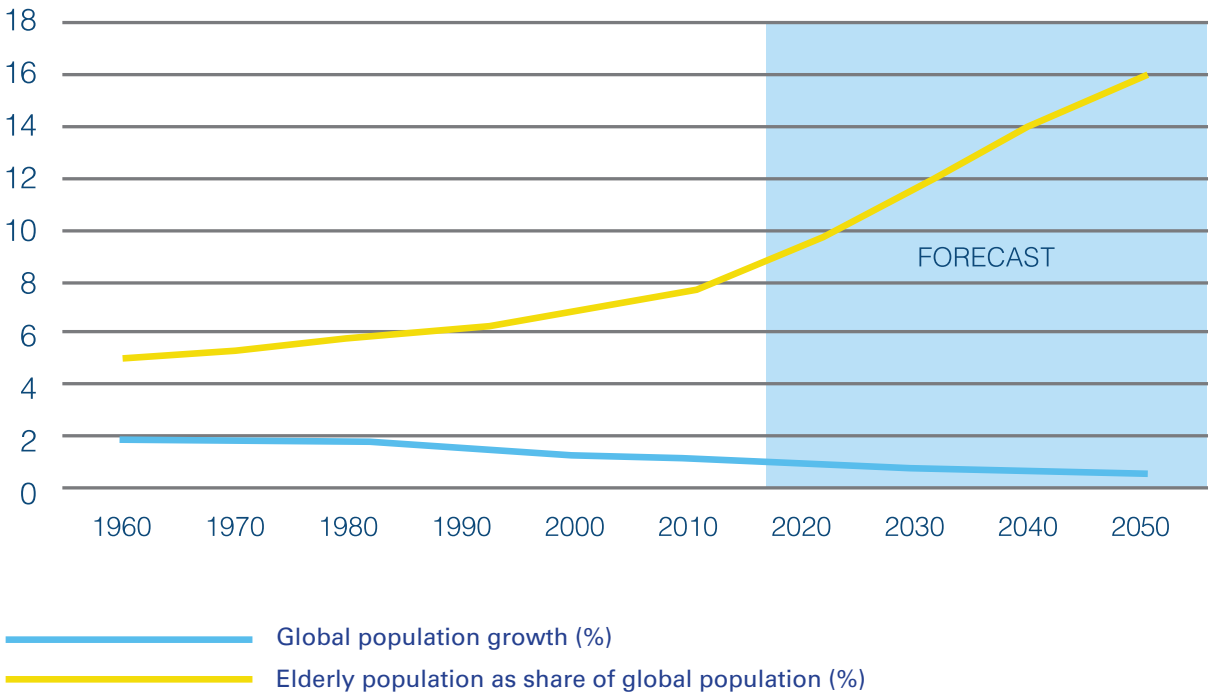
Today's global demographic trends have broken away from these historical norms. Now, emerging economies are also seeing their populations aging, defined as the share of its population aged 65 and above totaling 7 percent or more of its total population. In many respects, their aging experience is similar to that of advanced economies. Life expectancies in both groups have increased, largely due to improvements in nutrition, sanitation, and health care. Fertility rates have declined as women have delayed marriage and childbearing to seek opportunities in education and the work force. Together, these social trends have shifted the demographic trends from one of high mortality and high fertility, to one of low mortality and low fertility—the perfect conditions for population aging.

But there are marked differences in the way this demographic transition is taking place in emerging economies. Whereas in advanced economies, mortality rates tended to fall before fertility rates fell, in today's emerging economies, mortality rates and fertility rates have fallen almost simultaneously, or at least with less of a delay, before settling at low rates overall.

This will be the new normal: population aging occurring at a faster pace than in the past. It will present broad economic and social challenges, from the size of the labor markets to the size and configuration of families. Aging populations are seen as a growing fiscal burden; the IMF estimated that aggregate public expenditures for health care and pensions are forecasted to increase to over 20 percent of GDP for advanced economies and to 10 percent of GDP for emerging economies.[1]

This growing aging cohort, projected to reach 1.6 billion globally, and 956 million in Asia alone by 2050, presents tremendous challenges for policy makers. But it also contains huge potential value to the economy, to societies, and to businesses. With their deep knowledge, expertise, wisdom, and desire to remain productive and engaged in their families, communities, and workplaces, people over 65 can provide a longevity dividend that will help drive economic and social growth into the future.

Figure 1: The World's Share of Older Adults Is Increasing



Source: UN Population Data (2016)[2]

AGING SERIES MOTIVATION

Tapping into this longevity dividend will require large social, economic, and institutional reforms. Above all, it requires turning the conversation away from viewing the aging cohort purely in terms of the financial costs of their health care, social services, specialty care, and pensions, to viewing them as valuable human capital assets and large business markets.

Redefining this conversation starts with business leaders and policymakers moving away from framing population aging in alarmist terms, like tsunami, crisis, burden, and time bomb, words that dominate the mainstream discussions. A 2013 Pew Research Center survey asked members of the public from countries around the world how they viewed population aging. The top three countries that viewed aging as a major problem were in East Asia: Japan (87 percent of respondents), South Korea (79 percent), and China (67 percent). In fourth was Germany (55 percent), Europe's oldest country.[3]

But across the world, these attitudes are changing. In Phase 1 of our series on aging, we highlighted three institutions that have recognized and sought to capture the value of aging adults when they remain healthy and empowered to pursue purposeful activities.[4]

We pursued three objectives in our first report. First, we wanted to raise awareness and reverse the ageist attitudes that, consciously or subconsciously, institutionalize the exclusion of older adults from social participation. These attitudes propagate a "cult of youth" that discriminates against the elderly in human resources policies and hiring practices, public spending priorities, and mandatory retirement ages, to name a few.[5] Even worse, many older adults internalize these attitudes and leave the work force and other activities to make way for younger individuals.

Second, we encouraged older adults to pursue purposeful activities, however they define them. A greater number of older adults are foregoing traditional retirement experiences in place of activities that provide a greater sense of meaning. This is beneficial for everyone; it benefits older adults by promoting psychological and physical well-being and it benefits communities and the economy through their employment and their active and productive social engagement.

Our third objective was to show that institutions that provide an age-friendly and enabling environment can reap tremendous benefits from the wealth of knowledge and experience that older, more experienced adults offer. Moving forward, decisions about the inclusion or exclusion of the elderly will be paramount in the continued vibrancy and development of societies around the world.

Following the release of our first report, the Milken Institute engaged with private and public sector experts, practitioners, and thought leaders at the annual Aging Roundtable in Singapore and in other forums in Asia to discuss the state of aging in the region. These discussions laid the foundation for this second piece in our aging series and helped identify the unique cultural and social elements of the aging experience among Asia's aging cohort.

"A greater number of older adults are foregoing traditional retirement experiences in place of activities that provide a greater sense of meaning."

TOWARDS SUCCESSFUL AGING

Changing hearts and minds away from ageist attitudes will require realigning social attitudes with the reality that today's older adults are healthier, more active, and more enthusiastic than earlier generations about remaining productive members of society. It requires championing the abilities older adults and advocating for more inclusive and age-friendly environments. It also requires building an environment that enables older adults to remain engaged, active, and productive in society. There are tremendous upsides to aging that are hiding in plain sight and leveraging them requires new policies and new ideas.

Successful aging begins by getting the basics right: improving health care, its affordability and accessibility, improving mobility, and expanding social and professional opportunities. Meeting these basic needs and building robust age-friendly environments empowers them to be a driving force for economic growth and social development.

This is as true in the East as it is in the West, in both emerging and advanced economies. In this report, we focus on the aging experience in East and Southeast Asia (hereafter, Asia, unless specified). In pace and in magnitude, the demographic trends under way throughout the region have never been seen before. While the cultural, economic, and social contexts differ vastly throughout the region, these differences provide a fertile proving ground for a variety of innovative solutions adapted to suit the region's varied social and cultural landscape.

Economic & Social
Context of Aging in Asia

Rapid economic growth in the second half of the 20th century was the catalyst for tremendous social and cultural change in Asia. Greater prosperity, improved health, and better human capital had the inevitable social outcome of catalyzing the "Westernization" of Asia: individualism, urbanization, independence, and greater individual freedom. The most notable consequences of these changes has been the decline in fertility rates and smaller family sizes. What distinguishes the Asian experience of these trends is that the development to low fertility rates and small family sizes has been pushed by much faster economic growth, causing the social and cultural changes to occur much more quickly. This in turn has had a powerful impact on the family unit and has fundamentally changed the aging experience for Asia's over-65 cohort.

SUNRISE: THE ERA OF GROWTH

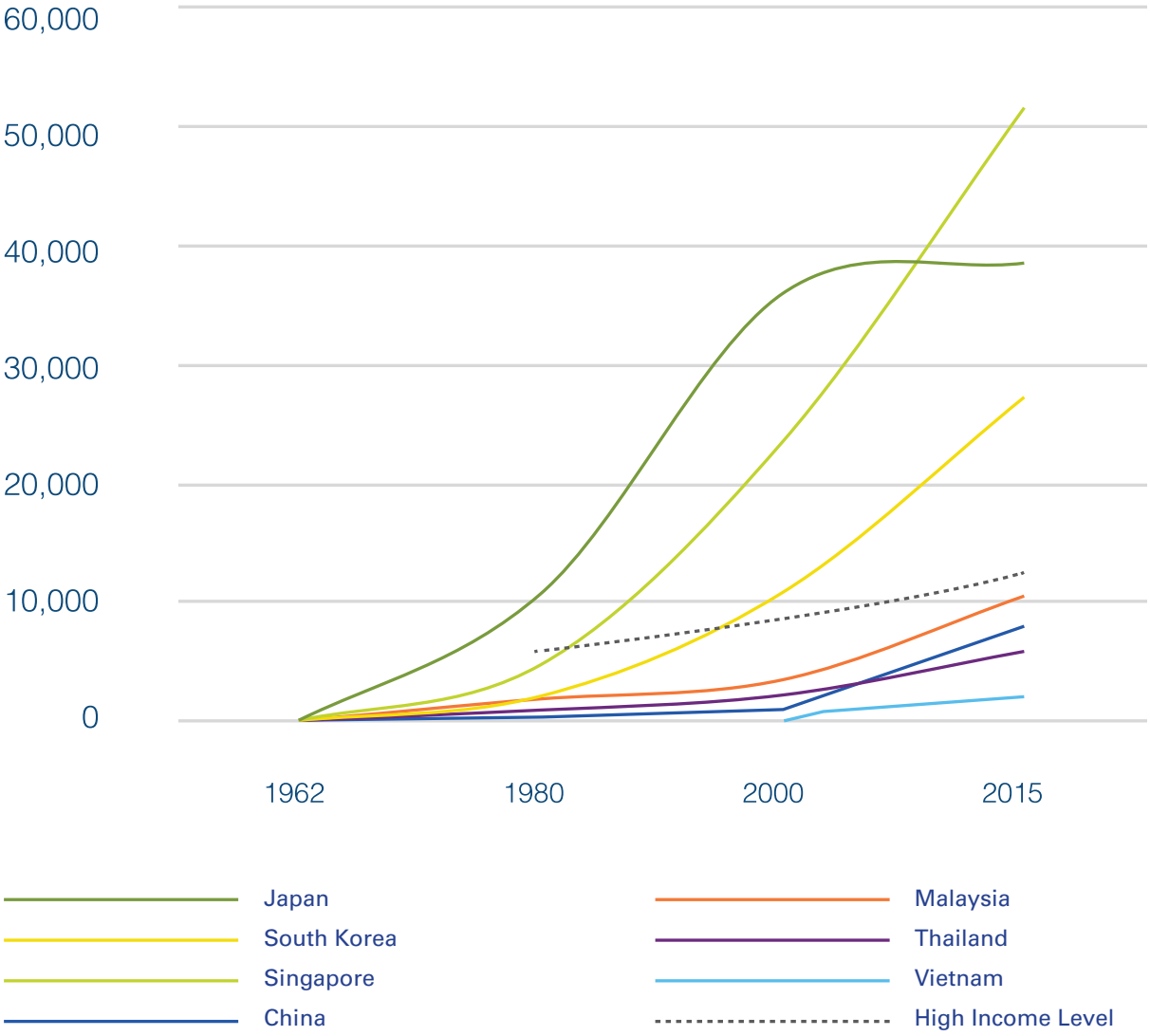
In the decades following World War II, Asia experienced tremendous economic growth and social modernization, bringing new educational and employment opportunities that lifted the incomes and living standards of millions of people. It improved health outcomes, reduced the incidence of communicable diseases, and extended life expectancy. Increased prosperity provided governments with more revenue to build human capital, develop industries, and provide social protection programs. But this economic growth has also had a significant impact on Asia's deep-seated cultural expectations surrounding the traditional family unit, setting the stage for a new aging experience.

Asia's postwar economic growth blossomed in Japan in the late 1950s, followed closely by the "Asian Tigers" of South Korea, Hong Kong, Singapore, and Taiwan. Under the strong guiding hand of the central government, Japan implemented a combination of industrial policies and financial regulations designed to boost domestic savings, build human capital, and invest in domestic industries—a model later successfully adapted by Korea.[6] By the late 1960s, Japan had become one of the world's most successful economies, and by 1980, it had become the world's second largest economy.[7]

This "Asian Miracle" development model then became the developmental prototype for the tiger economies of Singapore, Hong Kong, and Taiwan. But there was a difference: these countries, by adapting even more effective policies and practices, advanced their economies with even greater speed in a much shorter timeframe. Similarly, China protected domestic markets and heavily invested in physical and human capital before opening up to foreign investments and global markets in the late 1970s, quickly becoming the world's largest manufacturing hub and one of the fastest growing economies. With its effective centrally planned structure and stronger focus on growth, China has become the "new miracle" economy of Asia in the last 30 years.

This overwhelming focus on rapid economic growth resulted in uneven development across many facets of society. Despite lifting many people out of poverty, this new wealth has left many behind due to inequitable distribution of welfare benefits and health infrastructure. China is not alone in this experience. Indeed, the negative consequences of high growth in such a short period of time have also been seen in emerging economies, like Thailand, Malaysia, and Vietnam, as well as in advanced economies like South Korea.

Figure 2: Per Capita Economic Growth in Asia



Source: World Bank Indicator, GNI per capita, Atlas method, current US$

The tremendous speed and magnitude of Asia's economic growth had a significant impact on the aging experience. It differed in three ways from historical aging trends of advanced economies: the speed of population aging, the economic stage of development at which population aging was occurring, and the sheer numbers of adults continually moving into the aging cohort.

First, the region's population aging is happening much faster than advanced economies (Table 1). To put into historical context, it took the United States 69 years for its elderly population to double from 7 percent of its total population (at which point the population is considered "aging") to 14 percent (at which point it is considered "aged"). It took France over a century, 115 years, for the share of its elderly population to double from 7 percent to 14 percent.[8, 9]

Asia has been a very different story. It Japan it took just 26 years for the share of its elderly population to double from 7 percent to 14 percent. Estimates show that Korea hit the 14 percent threshold 18 years after passing the 7 percent mark. China's current demographic trends would have its share of elderly population reach 14 percent just 22 years since crossing the aging threshold of 7 percent.[10]

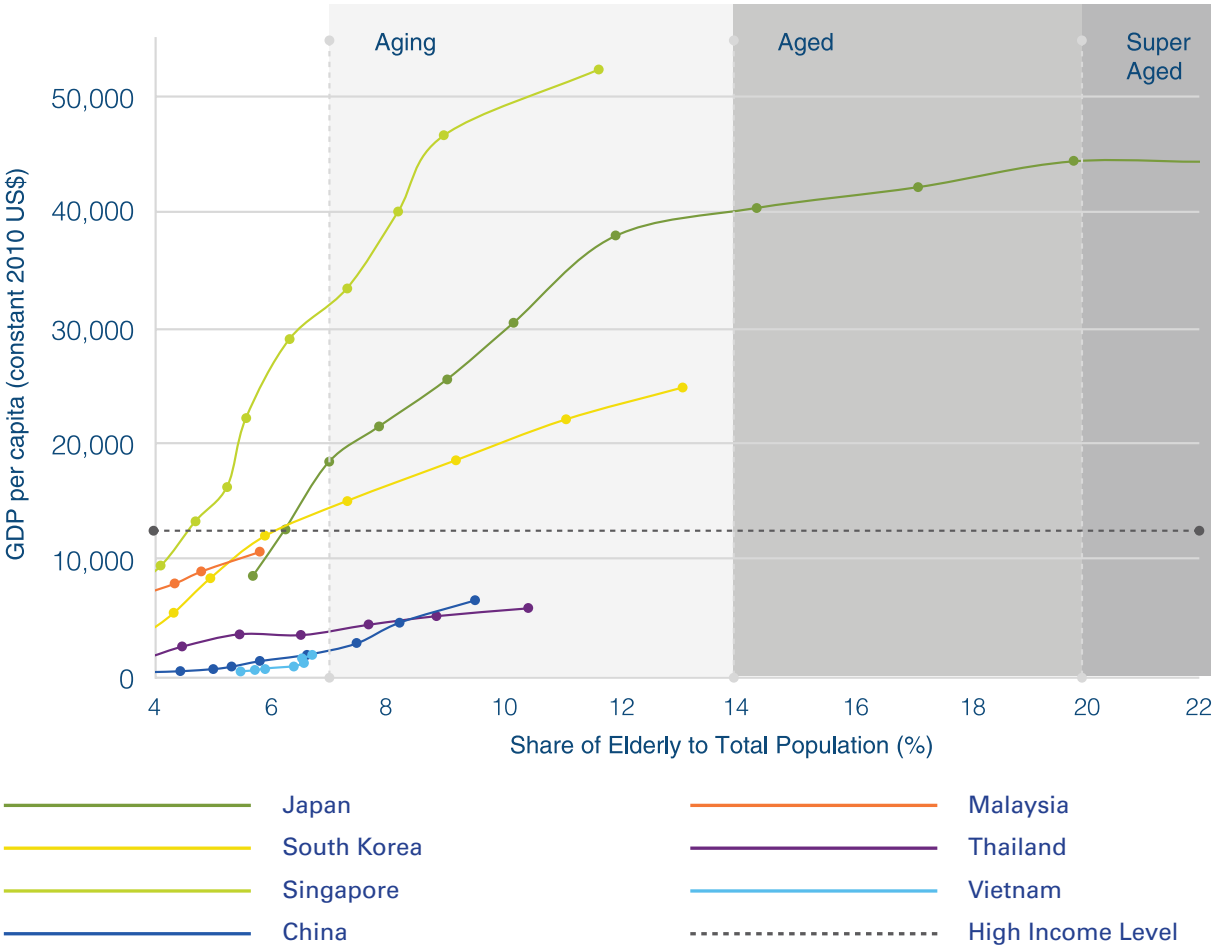
Table 1: Population Aging in Asia Is Much Faster than Historical Trends

Countries	Years for elderly population to double from 7% to 14%	Years for elderly population to double from 14% to 20%
France	115	41*
United States	69	16*
Germany	40	40*
Japan	26	12
South Korea	18	9*
China	22*	9*
Malaysia	24*	14*
Thailand	20*	9*
Vietnam	18*	14*

Source: UN Population Data (Projections at medium variant)

Second, Asia's aging experience has deviated from historical trends in that, historically, population aging has occurred only after a country has reached high per capita income status. In Asia, however, the emerging economies are growing old before getting rich, as measured by lower per capita income levels in proportion to the size of the elderly population (Figure 3). For example, when the size of Japan and South Korea's elderly population reached 7 percent of the total population, income per capita was about US$18,000 and US$14,000 respectively. In comparison, when China's elderly population reached 7 percent of total population, its income per capita was only US$1,700.

Figure 3: Emerging Asia Is Getting Old Before Getting Rich



Source: World Bank Data and UN Population Data

This phenomenon of getting old before getting rich poses a challenge for continued economic growth. Traditionally, economic growth depends on inputs of labor (the supply and quality of workers) and capital (infrastructure and technology accumulation). When population aging occurs at lower stages of economic development, the elderly population grows relative to the size of the labor supply. Emerging economies find it fiscally challenging to invest in capital and technology while providing social protection programs for the growing number of older adults. Either by perception or reality, the greater the size of an emerging economies' aging cohort relative to its general work force, the greater the constraint on growth.

Third, Asia's aging experience is unique because of the sheer volume of adults that will continue to move into aging cohorts. It is estimated that in Asia, 956 million people will be aged 65 and above by 2050. In a distant second, Europe's elderly population will number 195 million. China and India alone will have 371 million and 234 million older adults, respectively. Overall, Asia's elderly population will account for 61 percent of the world's elderly population by 2050, up from 54 percent in 2015 (Table 2).

Asia's experience has pushed population aging into uncharted territory, and more regions around the world are experiencing the same trends: rapid population aging, aging at a lower stage of economic development, and increasingly large numbers of older adults. This will be the new normal for other regions moving forward.

Table 2: Asia Will Continue to Have the Largest Number and Largest Share of the World's Elderly Population

		1960	2000	2015	2030	2050
Asia[a]	Millions	61.2	213.5	330.5	579.4	956.2
	% global pop	40.6%	51.0%	54.4%	58.2%	61.3%
Europe	Millions	53.1	106.9	129.8	169.4	194.9
	% global pop	35.3%	25.5%	21.3%	17.0%	12.5%
North America	Millions	18.4	38.7	53.4	83.1	98.1
	% global pop	12.2%	9.2%	8.8%	8.4%	6.29%
Latin American and Carribean	Millions	8.1	29.4	48.3	86.6	153.2
	% global pop	5.4%	7.0%	7.9%	8.7%	9.8%
Africa	Millions	8.8	27.4	41.5	69.1	146.2
	% global pop	5.8%	6.5%	6.8%	6.9%	9.4%
Oceania	Millions	1.2	3.1	4.7	7.4	10.3
	% global pop	0.8%	0.7%	0.8%	0.7%	0.7%

Source: UN Population Data

[a] *Refers to all of Asia as defined by the UN Population Data*

SOCIAL DISRUPTION AND CULTURAL CHANGE

Economic growth in the context of population aging has proved to be a double-edged sword. On one hand, economic growth provided the resources to raise living standards, increase wages, improve health outcomes, and broaden access to educational, professional, and social services for citizens. On the other, rapid economic growth disrupted Asia's deep-seated cultural expectations, traditional values, and social norms underpinning the aging experience and intergenerational old-age support.

These new economic opportunities in Asia's rapidly evolving industrialization changed the social fabric in three ways. First, it lowered fertility rates as an ever-increasing share of women chose to delay marriage and family formation to pursue higher education and employment. Second, these education and job opportunities pulled large numbers of people out of rural areas and into urban centers, separating adult children from parents and changing family structures and challenging traditional intergenerational support mechanisms. Third, improvements in health care and nutrition increased life expectancy and decreased morbidity, redefining traditional lifecycles of older adults.

WOMEN IN EDUCATION AND JOBS

As economies grew, so did the demand for more, and increasingly skilled, labor. The opportunities to reap economic benefits from the market economy drew many people into higher education and into the labor force. This had the largest impact on female education and female labor force participation rates. Participation in the market economy provided women greater financial independence, decreasing the likelihood that they would get married and have children at a younger age than in previous generations.

In Asia, women with university degrees were the least likely to get married as compared to women with only a high school degree or less.[11] As more women entered higher education, the rates of non-marriage and the average age of first marriage significantly increased over time. Naturally, fertility rates dropped. As marriage is still viewed as the sacrosanct precondition for family formation in these countries, delaying marriage reduces the number of years for childbearing.

Table 3: Marriage and Fertility Rates Among Asia's Women

	Percent never married (Females aged 30-34)		Average age at first marriage (Female)			Total fertility rate (Children per woman)			
	1970	2010	1970	2000	2015	1950	1970	2000	2015
China	1.0	5.0	..	23.3	..	6.1	4.9*	1.5	1.6
Japan	7.0	32.5	24.7	28.6	29.4[12]	3.0	2.1	1.4	1.4
South Korea	1.0	28.5	23.3	27.1	29.96[13]	5.1	4.3	1.5	1.3
Malaysia	..	..	22.1	25.1	..	6.2	4.6	3.2	1.9
Singapore	..	..	24.2	26.5	28.2[14]	6.6	2.8	1.6	1.2
Thailand	7.5	24.0	22.0	24.1	..	6.1	5.1	1.8	1.5
Vietnam	..	..	..	23.3	..	5.4	6.3	2.3	1.9
Notes						*China's One-Child Policy was implemented in 1979			
Source	Asia Research Institute, NUS[15]		World Bank Data[16]			UN Population Data			

Source: Asia Research Institute, NUS, World Bank Data, UN Population Data, and Milken Institute.

Table 4: Female Participation in Education and the Labor Force

	Female tertiary school enrollment (% gross)		Female workers per 1,000 male workers		
	1980	2000*	2015*	2003	2015
China	0.5	14.1	47.3	800	772
Japan	20.7	44.8	60.9	676	740
South Korea	6.0	59.0	81.2	644	698
Malaysia	3.1	26.5	31.8	518	649
Singapore	6.3	..	70.8	668	781
Thailand	4.4	38.3	57.3	861	843
Vietnam	1.2*	8.0	28.9	939	951

Source: World Bank Data and International Labor Organization
**or closest year*

URBANIZATION

Urbanization is a symbol as well as a driver of Asia's economic prosperity. Industrialization and economic development drew large numbers of people from rural areas into cities. In 1950, Asia's urban population accounted for only 17 percent of the total population. By 2000, over 35 percent of Asia's population lived in urban areas. By 2015, close to 50 percent were living in urban centers, with even greater urbanization in Asia's advanced economies—in Japan, over 90 percent of the population live in urban centers, and in South Korea, over 80 percent do.[17]

Table 5: Percentage of Asia's Population Living in an Urban Area

	1960	1980	2000	2015	2030	2050
China	16.2	19.4	35.9	55.6	68.7	75.8
Japan	63.3	76.2	78.7	93.5	96.9	97.7
South Korea	27.7	56.7	79.6	82.5	84.5	87.6
Malaysia	26.6	42.0	62.0	74.7	81.9	85.9
Thailand	19.7	26.8	31.4	50.4	63.9	71.8
Vietnam	14.7	19.3	24.4	33.6	43.0	53.8

Source: UN Population Data (Projections at medium variant)

Rapid urbanization has had two social consequences. First, the migration of adult children away from their aging parents, who remained in rural areas, changed the dynamics of intergenerational old-age support on which older adults had relied for generations. In Japan, for example, the percentage of elderly living with children dropped from 80 percent in 1950 to 50 percent by 1990. In Korea, the percentage of elderly living with children dropped from 78 percent in 1984 to 47 percent in 1994. Overall in Asia, the share of elderly living with children dropped from 75 percent in 1980 to 66 percent by 1990.[18]

Second, the young workers who moved into urban areas early in the country's postwar development and helped push up overall economic growth are now finding themselves aging in an environment without adequate financial, social, and health-care support. Many find themselves crowded out of the labor force by institutional policies that favor younger workers and effectively bar them from attaining financial self-sufficiency and meaningful social participation.

THE OLD-AGE LIFECYCLE

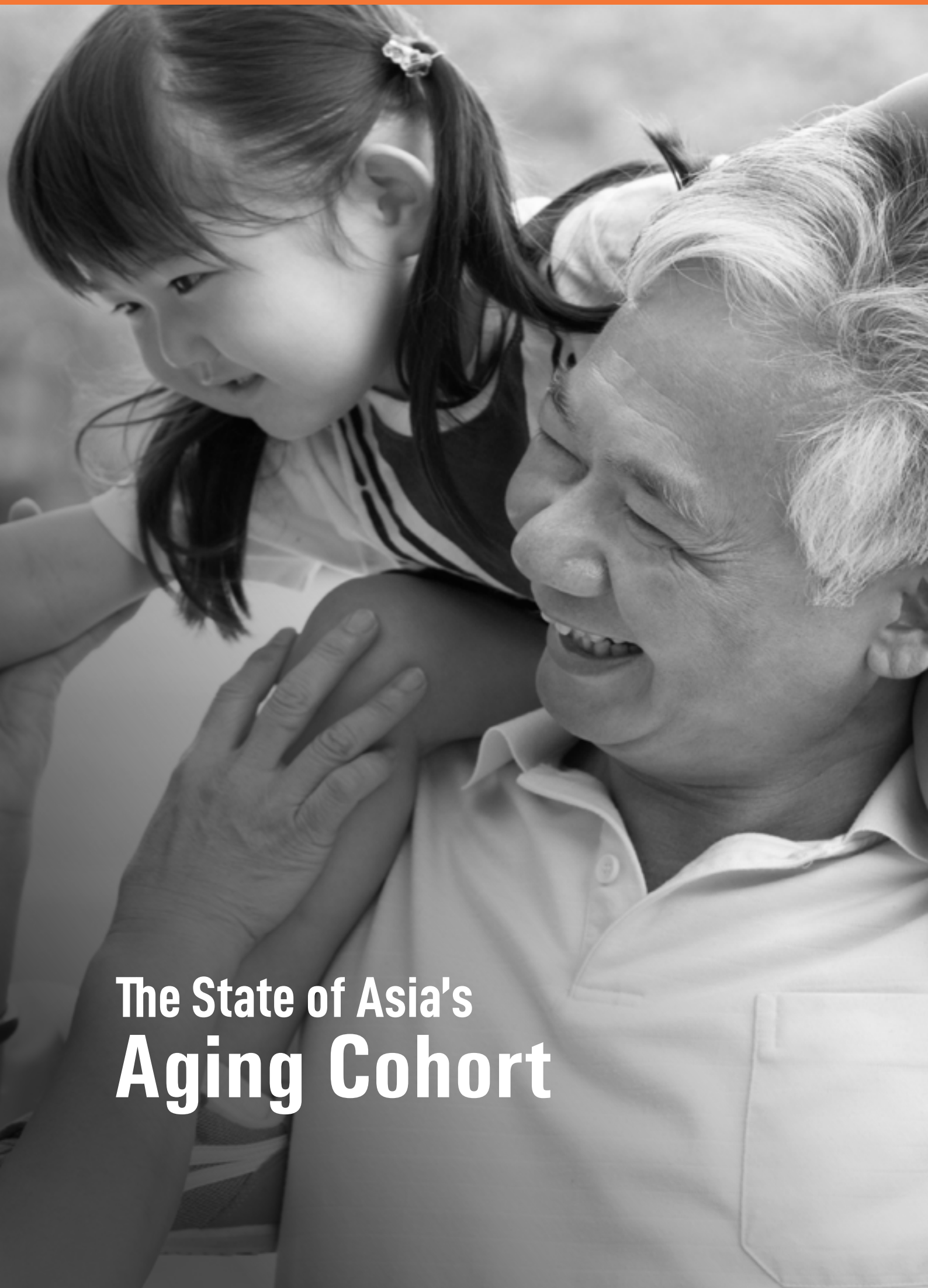
Third, economic growth has brought with it significant improvements in health outcomes, which have increased life expectancies (Table 6) and reduced the number of functional years lost to debilitating illness. As a result, aging adults have more active years compared to previous generations. But with government and institutional policies heavily favoring the participation of younger people, many in these aging cohorts have been left without meaningful social engagement or adequate financial resources to pay for their health care and basic expenses. They are living longer, but not provided with much support to be productive members of society.

Table 6: Average Life Expectancy (in Years) Beyond Age 65

	1960	2015	2030	2050
China	8.7	16.1	17.6	19.7
Japan	13.2	22.1	23.6	25.5
South Korea	12.1	20.6	22.4	25.6
Malaysia	12.1	16.3	17.7	19.7
Singapore	12.1	21.0	22.8	24.9
Thailand	13.7	18.4	19.7	21.4
Vietnam	13.2	19.1	20.5	22.4

Source: UN Population Data

Together, these social shifts—new economic opportunities, increased urbanization, and longer life expectancy—have led to smaller family sizes, greater generational separation, and increased reliance on public and private services. As a result, these nations' aging populations face significant challenges in accessing health-care services, finding caregivers, and obtaining the other long-term care resources they need as they age. Part 3 of this report dives into the range of unmet needs created by these social shifts, specifically on the aging experiences of older adults in South Korea, China, Thailand, Malaysia, and Vietnam. Taken together, these countries represent a wide spectrum of economic, social, and demographic characteristics. They offer valuable lessons on how to reframe the cultural mindset from one that views these aging cohorts as expensive burdens to one that sees them as important social and economic assets.



The State of Asia's Aging Cohort

This period of rapid growth and social development left in its wake a dramatically different aging experience. For generations, intergenerational co-residence and family support formed the bedrock of long-term care for aging adults. The daily support that aging parents provided their adult children and their families allowed them to remain relevant and active. Adult children, meanwhile, benefited from their parents' engagement, while fulfilling their filial obligations to support them.

But these support mechanisms drastically changed as children moved away from parents and had smaller families than had been the norm. Likewise, today's aging cohort are the men and women who, having pursued careers and economic opportunities, find themselves retired, aging alone, with their countries' social protection programs unprepared to meet their long-term needs.

The cultural perceptions of who should care for the elderly have also changed. Across Asia, a growing number of residents feel that the government should be the primary provider of support and personal care to older adults, rather than family members.[19]

Part 3 examines how this rapid economic and social transformation has disrupted traditional support mechanisms and left institutions inadequately prepared to provide old-age support. We examine the well-being of older adults in South Korea, China, Thailand, Malaysia, and Vietnam, with the aim of determining their critical needs, the steps their governments have taken to provide support, and to what degree they have been successful.

We chose these countries because each has experienced aging under distinct economic, social, cultural, and institutional conditions. South Korea is a highly industrialized and rapidly aging economy, but one in which social forces have excluded many older adults from culturally meaningful participation in the economy. China is a country that must balance its drive for higher-quality growth while filling the support gaps for its rapidly expanding elderly population across vastly diverse economic and geographic landscapes. Thailand is a fast-growing emerging market and an early implementer of universal social insurance, but it has significant coverage gaps among informal and seasonal workers in its large agricultural sector. Malaysia is the youngest country among the five, and its government has built a robust health care system and social assistance network for elderly citizens. Finally, Vietnam is one of the world's fastest aging economies, but GDP per capita remains low while the economy struggles to enter higher-value markets, factors that limit the revenue available for age-related expenditures.

Table 7: Health Spending and Infrastructure Indicators

	Public health spending (% GDP)		Health spending (per capita, current US$)		Hospitals per 100,000/ persons	Beds per 10,000/ persons	Doctors per 10,000/ persons
	1995	2014	1995	2014	2013*	2010*	2013*
China	1.78	3.10	21.0	419.7	..	42	14.9
Korea	1.38	3.99	458.9	2060.3	3.4	103	21.4
Malaysia	1.67	2.30	127.0	455.8	0.5	18	12
Thailand	1.97	5.62	108.9	360.4	1.8	21	3.9
Vietnam	1.76	3.82	14.3	142.4	..	31	11.9

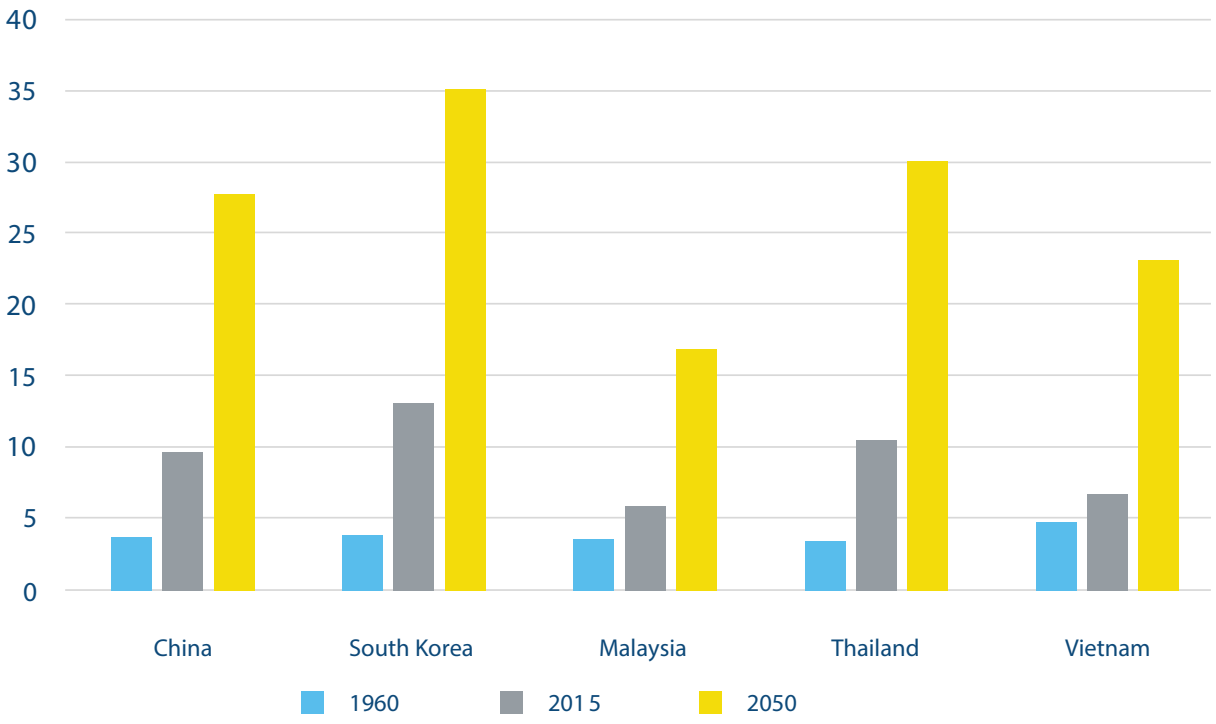
Sources: World Bank Indicators and World Health Organization [20]
**or most recent year*

These countries also have much in common with one another. The elderly in these countries want to remain relevant and engaged in their families and in society and to maintain their sense of self-worth and identity. All countries have a rich and deep culture of filial piety, but all have experienced a decline in family support for its elderly. A large number of residents feel that the responsibility for elder care now rests with the government. All have seen a marked change in elderly living arrangements—away from traditional multigenerational households towards smaller families and single-generation households. All have experienced reduction in infectious diseases and a rise of chronic and non-communicable diseases, which may protract and increase the costs of long-term health care. Finally, all remain unprepared to meet the needs of its older adults.

"This period of rapid growth and social development left in its wake a dramatically different aging experience. For generations, intergenerational co-residence and family support formed the bedrock of long-term care for aging adults."

In Part 3, we distill the challenges that today's aging adults are experiencing and the key concerns that must be addressed moving forward. We look at what these governments have committed to and implemented to meet their needs and how they are preparing for the future.

Figure 4: Percentage Share of Elderly Population (65+) to Total Population



Source: UN Population Data

SOUTH KOREA

KEY POINTS

- **Korea's elderly poverty rate of 50 percent is the highest among all advanced economies.**
- **Elderly suicide rates are one of the highest in the world, exacerbated by several risk factors including poverty, social isolation, depression, and other mental illnesses.**
- **Demand-side economics spurred the development of a large private sector in health-care services, but increasing costs may exclude many from using these services.**

Spurred by state-guided industrial and financial policies that protected domestic industries and incentivized exports, South Korea's economy grew rapidly in the decades following World War II, with the growth rate averaging 8.5 percent annually from the 1960s to the 1990s.[21] This economic growth also pushed per capita income into high-income levels in the 1990s, making it one of three countries in Asia (Japan and Singapore being the other two) to reach high-income per capita levels before its population crossed the 7 percent aging threshold. Today, Korea is one of Asia's wealthiest economies, measured both in aggregate and in per capita terms.

Though Korea grew rich quickly, many of its elderly left the labor force at a time when formal old-age pension programs were underdeveloped and find themselves today without adequate financial support. A 2014 OECD study reported that half of the country's elderly, those aged 65 and above, fell at or below the poverty line.[b] This is well above the OECD average of 12 percent and well above Japan's 20 percent poverty rate.[22, 23]

During the years of rapid economic growth, the government tried to keep social protection policies straightforward. It implemented

[b] *The OECD poverty line is defined as "half the median household income of the total population."*

universal health coverage and universal pensions in the late 1980s, with the goals of good health outcomes throughout life and adequate financial support in retirement. But by most accounts, Korea was late in implementing more wide-covering social policies. In 1976, it implemented a mandatory, contributions-based national medical insurance program, which heavily targeted formal-sector employees but excluded the self-employed and unemployed.[24]

In 1989 universal health coverage was provided to all citizens under varying forms of public health insurance, all of which were merged to become the single insurer system called the National Health Insurance (NHI) in 2004. Today, the program covers an estimated 97 percent of the population, with the remaining 3 percent, those considered the most vulnerable, covered under the means-tested Medical Aid Program.[25]

Complementing this insurance program was a largely private sector-driven health care ecosystem. While some governments use public funds to finance both public health insurance and the physical infrastructure and human capital of health care delivery, the Korean government left service provision to market forces. As a result, an estimated 94 percent of all facilities are privately owned, providing 88 percent all hospital beds.[26] Between public and private hospitals, there are a total of 103 hospital beds per 10,000 people, almost triple the OECD average of 37.[26]

Korea has done well in putting the basic health infrastructure and services in place. Total health-care expenditures amount to 7.4 percent of GDP, and, while this is lower than the OECD average of 12.3 percent, it spends a sizeable 34.4 percent of all public health-care expenditures on the elderly.[26] Cognizant of the growing health-care expenses of older adults, the government introduced a long-term care insurance program in 2008 when the share of its elderly population was only 10 percent, which complemented the NHI by financing institutional and community-based social services.[26]

To provide a stable source of funds for individuals to pay these services, the government in 1986 implemented a national pension scheme (NPS) for formal sector workers, funded by mandatory contributions by employers and employees. It expanded this program universally to the working population (aged 18-59) in 1999. But similar to the NHI, late universal roll-out and program exclusion left large coverage gaps among those who needed it; eligibility depended on contribution, which depended on formal sector employment. This excluded many older adults in low-wage and informal sector jobs, including temporary day laborers, homemakers, and those not working.[27]

Korea's universal health insurance and universal public pension programs are admirable achievements, but the fact that half of all elderly find themselves at or below the poverty line shows that significant gaps remain.

The dominance of the private sector in health care is a contributing factor to financial hardships. Health insurance does not cover services and treatments delivered by new technologies and medicines, and coordination between the NHI and the long-term care insurance programs is weak. This leads to inadequate health care delivery, poor specialist care, and high out-of-pocket costs, which increase the elderly's vulnerability to financial shocks.[28, 29]

Similarly, pension coverage may be universal in principle, but in practice, many remain uncovered or inadequately covered. Among those who are covered, the NPS provides only one third of personal income, not enough to cover even the basic cost of living. In Germany and the Netherlands by comparison, pension benefits provide over 70 percent of income for older adults.[28, 30]

Family support for the aging provides little relief. A government survey asking Koreans who should take care of the elderly shows how drastically perceptions have changed. In 1998, 90 percent of respondents indicated family should be the primary means of elderly support, and 40 percent indicated it was the responsibility of sons and their wives. By 2012, only 36 percent of respondents indicated that family should be the primary means of support, and 6 percent indicated it was the responsibility of sons and their wives.[31]

Table 8: Elderly One-Person Households in South Korea

	1980	2010
One-person households (%)	17.1	28.4

Source: Journal of Demographic Research [32]

Inadequate financial support from health care and pension programs and the decline in family support have taken a psychological toll on the elderly. A survey of elderly Koreans found that 46 percent had light-to-severe depression. Social engagements were listed as an important coping mechanism, but 36 percent reported having no one on whom to rely.[33] Suicide rates among the elderly have risen from 35 per 100,000 in 2000 to 82 per 100,000 people in 2010, compared to the OECD average of 22 per 100,000.[34]

Korea's elderly population was projected to cross the 14 percent threshold before the end of 2017, reach 20 percent by 2026, and number 12.5 million by 2030.[35] As the government works towards reducing the high incidence of poverty and suicide among aging adults, it must recognize that many among these aging cohorts desire to be engaged and productive members of society. Their desire to remain relevant and self-sufficient provides an avenue by which governments can leverage their abilities and capture the economic and social benefits the aging cohort offers. The government must take advantage of this good health and cultural desire to remain active to provide purposeful activities. This will not only mitigate mental illness and suicide among the elderly, but benefit the economy and society as a whole.

CHINA

KEY POINTS

- **The sheer size of China's growing elderly population will impact every aspect of the country's social fabric.**
- **The large economic and social gaps between urban and rural areas is creating vastly different aging experiences.**
- **The decline in family size and changing attitudes towards intergenerational support will require the government and other institutions to fill the gaps.**

In four short decades, China transformed its economy from a state-run, centrally planned system to a market-driven, state-guided economy. With an average annual growth rate of 10 percent between 1980 and 2010, China has lifted more than 500 million people out of poverty.[36, 37] However, as its economy continues to expand, China's demographic shifts and rapidly aging society will present large challenges for government planners. One yard stick to measure their success will be to see if they are able to maintain growth and prosperity, while providing adequate support to a growing aging demographic. By sheer numbers, China has the world's largest elderly population—146 million adults aged 65 aged or over, comprising 9.6 percent of the country's total population. This figure is expected to increase to 371 million by mid-century, almost as large as the estimated population of the United States in 2050.

While China's overall economy has become the second largest in the world,[38] its per capita income remains at low levels relative to the rapidly increasing size of its elderly population. By way of comparison, when Japan's and Korea's elderly populations reached 10 percent, their per capita incomes stood at US$30,000 and US$20,000, respectively. With China's elderly population at nearly 10 percent, per capita income is only US$6,500.

One reason for persistently low GDP per capita levels is that China's vast geography led to sharp disparities in economic and social development between rural areas and urban centers. Ever since the country adopted market reforms in the late 1970s and opened its economy, China's investment in health care infrastructure and social insurance has taken a back seat to the development of its industrial sector, especially along coastal urban centers. The urban-rural gap has widened as these forces pull young men and women away from rural areas into cities for educational and employment opportunities.

Market reforms in the late 1970s shifted the responsibility to provide health care from the government to market forces. Pre-reforms, the government maintained all hospitals, both in urban centers and rural areas. After the reforms, many of those institutions lost government funding and didn't survive the push towards privatization and industrialization. The reduction of government funding meant hospitals had to rely almost exclusively on patient fees to run operations, turning many into for-profit entities and making health care unaffordable for many people.[39]

It took several decades for the government to address these service and financing disruptions. In 2002, Beijing implemented the New Rural Medical Scheme for its rural population, and in 2007, the government implemented the Urban Resident Basic Medical Insurance program for employees in the informal sector. Finally, in 2011, the government implemented the Social Insurance Law that sought to address social insurance coverage gaps, especially among rural residents, and to provide a stronger framework for a system based more on contributions by employers and employees.[40]

But while these programs provide wide coverage, the benefits do not pay for peripheral services like transportation. Data from the China Health and Retirement Longitudinal (CHARL) study published in 2013 show that while a sizeable 94 percent of rural elderly are covered by social health insurance, median out-of-pocket costs for in-patient care for one year topped CNY2,400 (US$350).[41] The average cost of one hospital visit for the rural elderly was 1.3 times one's annual income, and major operations cost more than six times their average annual income.[42] The social insurance program for informal sector urban workers also had high coverage, about 93 percent, but out-of-pocket costs averaged CNY3,000 (US$442), an incredibly high amount.[41]

With its vast geography, China's spreads its relatively low budget for public health care, estimated at 3.1 percent of GDP, very thinly. Rural areas suffer from a deficit of health-care facilities and the long distances required to reach treatment facilities increase non-medical out-of-pocket expenses. Urban centers provide a majority of the health care infrastructure and treatment facilities; most of China's 42 hospital beds per 10,000 people are concentrated in urban areas, well out of reach of rural residents. This increases the prevalence of untreated illnesses, the risk of physical disability, and the long-term costs to treat chronic illnesses. Urban centers also provide most of the 3.15 million beds of the 40,000 elderly care facilities, about half as

many long-term care beds as in advanced economies. Approximately 2 percent of China's elderly live in institutional facilities, compared to 4-8 percent in Western countries.[43]

The concentration of health care infrastructure and care facilities in urban areas for the elderly severely disadvantages the estimated 80 million older adults, 60 percent of China's elderly population, who reside in rural areas.[44] The CHARL study findings also showed that 65 percent of rural elderly fall at or below the defined rural poverty line of CNY2,433 (US$385) per year. Even after accounting for the pooling of household income and other income transfers, 37-40 percent of rural elderly live at or below the poverty line.[41]

On the other hand, for the millions who moved into urban centers early in China's economic development and are now part of today's aging cohort, their aging experiences have been markedly different from the experience of the elderly in rural areas. First, in the government's attempt to mitigate overpopulation, it restricted family formation to one child. This placed a significant financial burden on couples, many of whom had to support two sets of parents while possibly raising their own child, known as the 4-2-1 family structure. Further down the road, that one child may have to support one set of parents and two sets of grandparents, or potentially two sets of parents and four sets of grandparents. Second, the rapidly expanding economy provided women with greater opportunities to pursue careers and delay or forego marriage, leaving this demographic with reduced or no family support.

If public health insurance programs haven't provided adequate financial support to cover health-care costs, pension benefits have done little to make up the difference. China's current pension system consists of the urban pension scheme, which covers formal sector employees, the civil and public service pension system, which covers civil servants, the civil and public service pension system, which covers civil servants, and the rural pension system, which covers rural residents.[45] The major shortcoming of the rural pension system, under which many elderly fall, is that it is a voluntary contribution program, which, for many elderly and informal sector workers, is a heavy burden. While the system guarantees at least CNY55 per month (US$9), it is hardly adequate for daily living expenses. In any case, only 26 percent are covered under the rural pension scheme and the median annual benefit is a meager CNY740 (US$117). Overall, 57 percent of the rural elderly are not covered under any pension program.[41]

In contrast, benefits provided by the urban pension scheme, CNY1,200 (US$190) per year, are almost double that of rural pensions, while the civil and public service pension pays CNY24,000 (US$3,800) per year. That said, 29 percent of China's elderly population fall at or below the urban income poverty line of CNY3,200 (US$510) per year.[41]

One reason for the growing number of urban elderly poor is that their income declines sharply between the age of 50 and 60, due in

large part to relatively early mandatory retirement ages (about 55 for women and 60 for men), with the result that only 20 percent of workers age 60 to 64 are still employed. While the urban pension and health insurance schemes cover 84 percent and 92 percent of the urban elderly, respectively, low benefits and large out-of-pocket expenses leave many elderly vulnerable to extreme financial shocks related to medical care.[41]

Given the profound demographic changes under way in China, the government cannot assume that traditional intergenerational support alone will be sufficient to provide adequately for the long-term care needs of older adults. To simply delegate it to families would leave millions vulnerable to physical and psychological hardships. Though the family remains the preferred choice as to who should be responsible for providing the daily needs of the elderly, this long-held point of view is changing.[41] Two factors are eroding this social norm. First, government restrictions on family size have limited the number of children available for old-age support. Second, the economic and employment opportunities presented in urban areas disrupted the traditional rural family unit.

Over 60 percent of China's elderly do not live with their children, and half of them do not receive income transfers from them.[41] According to a 2016 World Bank study, 60 percent of Chinese feel the government should be responsible for providing income support to older adults.[20] In the longer term, as family support continues to decline, the government may be required to provide more institutional and community-based care services. For the moment, only 17 percent of older adults indicated they preferred home and community-based care, and just 8 percent preferred institutional care for their long-term care arrangements,[46] though this may change as family support continues to drop.

The physical and psychological impacts of these social and financial disruptions are already being felt. According to the CHARL study, 32 percent of China's elderly self-reported that they suffered from poor health and 38 percent reported having difficulty performing daily physical activities.[41] Of greater concern, similar to Korea's elderly, China's elderly suffer from high suicide rates. As of 2014, China had an estimated 34.5 elderly suicides per 100,000 people, accounting for 38-44 percent of suicide victims nationally. Suicide rates among older men in rural areas were three to five times higher than their urban counterparts.[47, 48] For both urban and rural elderly, the risk factors of suicide and suicidal thoughts are deaths in the family, especially of a spouse or child, family conflict, social isolation, chronic disease, physical disability, and inability to perform daily living activities.[49, 50, 51]

There are promising signs, however. The Chinese government is making progress towards providing greater coverage and benefits for their elderly. The 2011 Social Insurance Law set the framework for a contributions-based pension system for formal sector employees, as well as social insurance for rural residents and non-salaried urban sector workers. The law also provides a way to supplement

or subsidize contributions by low-income older adults. In 2015, the government promised a basic pension for all employees, possibly by merging existing programs. This would reduce the number of people without coverage as well as improve the availability and accessibility of benefits for migrant workers.[52, 53] These positive steps come none too soon. The size of China's elderly population will only continue to grow, as will the challenges of caring for them, unless the groundwork for a more supportive aging environment is laid down quickly.

MALAYSIA

KEY POINTS

- **The government's five-year national development plans identified old-age empowerment, health, and productivity when its aging population constituted only 3.7 percent of its total population.**
- **Long-term planning has helped build a robust health care system that balances both private and public sector provision of care.**
- **Concerns about the availability and the quality of health-care facilities and medical professionals will challenge the government's commitment to life-long health and successful aging.**

The size of Malaysia's elderly population is comparatively small. At 6 percent of its total population, it's below Asia's overall average of 7.5 percent.[c] But in the last four decades, the growth of Malaysia's elderly cohort has outpaced total population growth. Forecasts point to increasingly rapid population aging, set to cross the 7 percent aging threshold in 2020 and double to 14 percent just 24 years later.

Unlike Thailand, China, and Vietnam's growth and aging trajectories, Malaysia's GDP per capita is likely to cross the high-income threshold at about the same time that its elderly population crosses the 7 percent aging threshold. This follows the GDP per capita trajectories of Japan and Korea relative to its elderly population. As Figure 2 above shows, Malaysia's GDP per capita of US$10,800 lies between Japan's per capita GDP of US$10,000 and Korea's US$12,000, relative to this stage of population aging.

Even with a relatively young population, the government, a federal parliament, has been very intentional in its long-term policy planning. As far back as 1995, when its elderly population accounted for a

[c] *This refers to all of Asia as defined by UN Population Data*

miniscule 3.7 percent, it implemented the National Policy for Older Persons, an inter-ministry drive to plan for a holistic, dignified aging experience for older adults. It complemented this policy three years later with its Plan for Action for the Older Persons. Both were combined and updated in 2011, with a renewed commitment to empower older adults to remain healthy, active, and independent.[54, 55]

A major focus of these plans was to build a robust health care system that is universally accessible to all citizens. Long-term planning through the government's five-year national development plans, which it began in 1966, has provided a strong foundation for the development of an increasingly comprehensive health care system. Since the 1960s, the government has been building a network of public primary care facilities, especially in rural areas. Like Thailand, Malaysia was an early implementer of universal health coverage, officially launched in 1980.[56] By the late 1980s, the government had one primary health center for every 21,000 residents, a significant improvement over the one center for every 638,000 residents two decades earlier.[57]

The government's long-term planning efforts established a strong, flexible foundation for a comprehensive health care system to develop. For example, the government has allowed the private sector to provide primary health-care facilities and services where there is demand for them. As a result, the private sector currently dominates in urban areas, accounting for 91 percent of the 4,529 urban clinics. This is similar to Korea's health care ecosystem where the private sector accounts for a majority of clinics in urban areas. At the same time, the government has focused on increasing the availability of public health facilities and services in rural areas, with the result that 64 percent of the 806 rural clinics are publicly run.[57] Government data shows that 65 percent of Malaysia's elderly reside in urban areas, as compared to 35 percent living in rural areas.[58]

Despite these considerable achievements, if the Malaysian government is to maintain its commitment to improve health-care services and social programs as its elderly population grows, it must address two shortfalls of the current system. First, the number of facilities and medical professionals remains relatively low. There are an estimated 0.5 hospitals per 100,000 people and 18 hospital beds and 12 doctors per 10,000 people, more closely mirroring the profile of a low-income country like Vietnam than a high-income country like Korea (103 beds and 21.4 doctors per 10,000 people). Specific to primary care, there are about 2.9 doctors for every 10,000 residents, with an average of 1.2 doctors in rural areas and 3.6 in urban areas. This is low compared to more developed primary health care systems. Australia, in comparison, has 11.2 primary care doctors for every 10,000 residents.[57]

More generally, health-related spending should be increased to keep pace with the growing numbers of elderly. In 2015, Malaysia spent an estimated US$783 per elderly person when its total elderly population made up 5.8 percent of its total population. This is lower than Korea

(13 percent elderly; US$4,023), Thailand (12 percent; US$1,235), and China (9.6 percent; US$846).[59] Malaysia spends only 2.3 percent of its GDP on public health and only sets aside 0.9 percent of all social protection expenditure for the elderly.[60] This leaves a significant gap to be covered by the elderly themselves and their families. For the whole population, about 38 percent of total health expenditures are now covered out-of-pocket.[61]

Second, the quality of health-care professionals and staff must be improved. According to government statistics, the country added almost 19,000 doctors and 24,000 nurses between 2010 and 2014.[62] While this improved the ratio of doctors to population, it brings into question the quality of practicing doctors, especially in the private sector. Estimates show that only 7.6 percent of all primary care doctors hold postgraduate qualifications and 39 percent of private sector nursing aides are not certified. This could explain why an estimated 80 percent of the population prefer public facilities for primary care, and why people are less likely to recommend private facilities for outpatient care.[63] Without improvements to the quality of health-care and medical professionals, the government may face overcapacity concerns at its public clinics, or see a decline in the use of health-care services, increasing the non-treatment and under-treatment of illnesses.

Overall, progress in basic sanitation, hygiene, vaccinations, and technology has steadily improved Malaysia's health outcomes and increased life expectancy. This has also pushed the country's epidemiological disease burden towards non-communicable diseases, which today accounts for nine of the top 10 causes of death in Malaysia.[56, 64] Among Malaysia's elderly, 86 percent self-report their health as poor on a range of physiological, cognitive, and other indicators.[65] The most common conditions among Malaysia's rural elderly were hypertension, bone and joint pains, gastric pain, poor vision, and hearing problems.[66] Among the urban population, the most common chronic health problems were cardiovascular disease, endocrine disorders, bone and joint pains, and urologic disorders.[67]

Given the persistent nature of chronic illnesses, increases in disease prevalence will increase the long-term costs for treatment and long-term care. By most accounts, Malaysia's long-term care sector remains underdeveloped; the availability of care facilities and specialized geriatric care in existing hospitals has not kept up with demand. Institutional care also remains underdeveloped, providing only 12 private nursing homes, three private hospices, and five geriatric units with 150 beds, according to government statistics.[68]

The Malaysian government has acknowledged it cannot fully rely on family support and has committed to increasing the availability of long-term care services and institutional care. Similar to East Asia's cultural expectation of filial duty, Malaysia's tradition of *balas-jasa* commits children to supporting elderly parents as a way to repay the life-time of upbringing, and indeed, 80 percent of the elderly live with direct family members (spouse or children). However, the attitudes of

most Malaysians as to who should provide income and personal care to the elderly now skews towards the government.[20] Though cared for by their children's families, the elderly are provided little in the way of stable income or long-term care.

Waning family support was reflected in a 2016 Malaysian Institute of Economic Research study that found that 60 percent of the elderly surveyed self-reported having no income.[69] Half of all elderly have an annual income between MYR0 and MYR2,100 (US$488).[70] Older women are especially vulnerable, many of whom served as homemakers throughout their lives and have little savings and few sources of financial support. The government provides a monthly basic pension of MYR300 to the most vulnerable elderly, especially with those with no children to receive support from, but this is not enough to sustain daily living needs.[28]

One reason for the high prevalence of elderly poor is low formal sector employment after the age of 55. In 2016, only 49 percent of people between the ages of 55 and 64 were active in the labor force, a decline from 51 percent in the previous year. Women's participation in the labor force is markedly lower than men's: 32 percent compared to 67 percent for males.[71] This could be attributed to Malaysia's retirement age and eligibility for pensions beginning at age 60 for both men and women. For those aged 60 and above, 17 percent remain self-employed.[72]

This relatively early age for retirement and pension eligibility raises another concern—inadequate savings in the country's provident fund. Estimates show that the average per retiree savings in the Employee Provident Fund, MYR159,952 (US$41,000), only lasts about 15.6 years, and that's assuming pensioners spend at the poverty income level of about MYR930 (US$240) per month.[73] However, an estimated 50 percent of pensioners depleted their funds within five years, and 70 percent within 10 years.[74]

Given the country's increasing life expectancy, improving the labor force participation rate of this 60-plus group will provide a steady source of wealth accumulation for the later stages of life. The elderly who are no longer capable of maintaining formal sector employment will need medical treatment and long-term care that is more accessible and more affordable. Ensuring that they do not fall through the cracks requires both strengthening the support and resources for families who remain primary caregivers, as well as investment in the facilities, services, and caregivers for those who no longer have that family support.

THAILAND

KEY POINTS

- **The economy grew rapidly in the three decades before the Asian Financial Crisis and rebounded relatively well afterwards. But, moving forward, the continuing sizeable share of the agricultural sector to GDP may depress growth and wages.**
- **Thailand has implemented both universal health insurance and universal basic pension, but benefits are inadequate to pay for the treatment and peripheral services needed to address the growing burden of chronic disease.**
- **Left untreated, these conditions lead to physical disability, and with declining family support among Thai families, alternative sources of financial and long-term care will need to be improved.**

Thailand is one of Asia's emerging economies whose demography is aging quickly without significant GDP per capita gains. The share of its elderly population is approaching 11 percent but per capita income remains at US$6,000, well behind Japan and Korea at similar demographic characteristics. The country is experiencing relatively strong economic growth, averaging 5 percent annually since the Asian Financial Crisis (1997-2001). Wages, however, remain low, which will impact the financing of health care and age-related long-term care.

A large reason for Thailand's low wages is that a relatively large share of its labor force, 40 percent, remains employed in the agricultural sector (farming, hunting, fishing, forestry) even as the share of agriculture in overall GDP has fallen from 22 percent in the 1960s to 12 percent in 2014. By comparison, in advanced economies, agriculture accounts for only 1-3 percent of GDP. This means that much of Thailand's workforce remains in agriculture at a time when

a greater number might have transitioned into higher-value market segments. However, the size of the labor force in manufacturing and industry peaked at 16 percent (5.6 million workers) in 2005 and has since stagnated at 14 percent. In spite of this, manufacturing and industry as a share of GDP rose from 30 percent in the early 1980s to 42 percent by 2014.[75, 76] There is still plenty of room to expand the labor force in manufacturing if more workers can be transitioned from agriculture, which would be beneficial to economic growth and wages.

For many of Thailand's older adults, agriculture and informal sector employment have left many without adequate savings to pay for health care and long-term support. As of 2012, only 2 percent of elderly aged 60 and above were employed in the formal economy.[77] An estimated two thirds of Thailand's elderly have no savings, while the other one-third had an average savings amount of about THB100,000 (US$3,000).[78]

The Thai government, a constitutional monarchy with parliamentary democracy, has tried to stay ahead of the financial and health-care needs of its citizens. It implemented universal health insurance in 2002, a social insurance program for formal sector workers in 2003, and a voluntary national savings fund in 2011. It also provides an old-age allowance to informal sector workers uncovered by other programs and vulnerable older adults.[28, 79] The implementation of the universal health coverage scheme provided health coverage to 18 million previously uninsured people and improved the coverage to another 29 million people.[80]

Compared to the other countries examined in Part 3, Thailand spends the most on public health at 5.6 percent of GDP. A large share of the country's total health care infrastructure is provided by the government, including two thirds of all hospital beds. Even so, infrastructure provision is relatively low. As Table 7 shows, there are only 1.8 hospitals per 100,000 people and 21 beds and 3.9 doctors per 10,000 people.

Low infrastructure provision has led to higher out-of-pocket costs and declining health-care resource utilization. Among the elderly, and markedly so among those aged 75 and above, there has been a significant decline in in-patient and out-patient service utilization. Long waiting times, long travel distances to medical facilities, and poor public transportation are the biggest reasons the elderly do not seek treatment. Transportation alone can account for 20 percent and 62 percent of out-of-pocket health-related expenditure for the urban and rural elderly, respectively. This amounts to an average annual cost of Bt474 (US$14) for the urban elderly and Bt6,000 (US$176) for the rural elderly, not a small amount to these residents.[81]

Without significant reductions to the high out-of-pocket costs, a greater number of older adults will be dissuaded to seek medical treatment for illnesses, which compounds the disease burden, increases the cost of treatment, and makes long-term care much

more challenging and costly. Already, data from self-reported health outcomes among Thailand's elderly show a significant increase in poor health of those between the ages of 60 and 64 and those above 80 years.[82]

Table 9: Self-reported Health Status (Percentage of Sample)

	Poor to Good Health	Very Poor to Poor Health
Ages 60 to 64	47	9
Ages 80+	74	30

Source: Knodel, Prachuabmoh and Chayovan (2013)[81]

Similar to Malaysia and other emerging economies, Thailand's disease burden is shifting towards non-communicable diseases, which now account for 74 percent of all deaths in Thailand. Among the elderly, the leading chronic diseases were stroke, diabetes, ischemic heart disease, and obstructive lung disease.[83] The growing prevalence of chronic disease and decreasing health care utilization due to high out-of-pocket costs significantly increases the onset of premature physical and mental disability and its related long-term care treatments. Already, close to 40 percent of all elderly experience difficulties with at least one physical or mental activity, from dressing and eating to counting money and taking medications.[84]

Thailand's high obesity rate, the second highest in Asia, is a major concern because it exacerbates other chronic illnesses, including heart disease, diabetes, hypertension, and various cancers. Between 1991 and 2014, obesity rates increased more than 2.5 times. In 1991, about 16 percent of women and 9 percent of men were obese, but by 2014, about 41 percent of women and 33 percent of men were considered obese.[85] Today's obesity will lead to tomorrow's long-term chronic illnesses, to which the elderly are especially vulnerable and for whom the added financial burden for care will be exceptionally high.

In theory, the gaps left by Thailand's universal health insurance should be supplemented by a range of other pension schemes and social programs. The Old-Age Pension Fund social insurance program provides coverage for private sector employees, but as of 2009, the program only covered 27 percent of the working population, or about 15 percent of the overall population.[28] The country's basic social pension for the country's vulnerable elderly provides very little in the way of support, amounting to between Bt600 to Bt1,000 (US$12 to US$32) per month.[86] The government tried to encourage voluntary savings among informal and low-wage workers through its National Savings Fund implemented in 2015, but even so, low-wage

informal sector work, especially among older workers, leave very little disposable income for savings and even less in the way of a permanent source of income in old age. As a result, many elderly continue to work until such time that physical ailments and other limitations prevent them from doing so. It's at this point that they will need greater alternative support and long-term care providers in the event that family is not available to provide that care.

Financial support for aging parents has traditionally been the onus of adult children. But as was the experience of other Asian countries, Thailand's families shrunk in size as fertility rates fell from 6.4 children in 1960 to just 1.9 in 2015 with the overall household size shrinking from 5 in 1986 to 3.6 in 2011. In 1995, 71 percent of older adults lived with children, but by 2014 only 55 percent did. The continued reduction in family size will have an impact on the financial and long-term support provided by children. Most recent estimates show that 60 percent of Thailand's elderly receive financial transfers from adult children amounting to a median value of Bt22,250 (US$740) per year but this may decline as fewer children become available to provide support. Likewise, the spouse as primary provider of daily living assistance declined from 29 percent among older adults aged 60 to 64 to 8 percent for those aged 80 and above. Only half of Thailand's elderly who self-reported needing assistance were receiving it.[81, 87]

Currently, the psychological well-being of Thailand's elderly is good. The mean self-assessed happiness on a scale of 0 to 10 (a higher score means higher happiness) was 7.4.[81] However, the government must continually be aware that without adequate sources of support or access to affordable services, the elderly will face increasing challenges to their physical mobility, psychological well-being, and ability to pay for long-term care. To avoid the declines in psychological well-being experienced by the elderly in China and Korea, Thailand's government and institutions must meet these growing critical needs quickly and comprehensively.

VIETNAM

KEY POINTS

- **Like other emerging economies in Asia, Vietnam's economy has grown quickly, but industry sectors remain at low-value market segments and largely agrarian.**
- **This depresses GDP per capita growth, which at this stage of demographic aging remains the lowest among all the countries in Part 3.**
- **With underdeveloped public and social programs, family support will remain crucial for Vietnam's elderly, which is one of the fastest growing demographic cohorts of any country in the world.**

Vietnam has a young population. The share of its elderly population just crossed the "aging" threshold of 7 percent in 2016, and its old-age dependency ratio[d] is 10.7, well below Japan (47), Korea (20), and Malaysia and Thailand (16). But Vietnam is also one of the world's fastest aging populations. Estimates show that it will only take 18 years for its elderly population to double from 7 percent to 14 percent before crossing the "super-aged" threshold of 20 percent by 2048. In sum, the country's elderly population will increase from 7 percent to 20 percent in a comparatively short 32 years.

Like other emerging economies, Vietnam has been growing at a respectable pace, averaging 6.7 percent since the 1990s, but overall GDP per capita remains very low. Currently, its GDP per capita given the size of its aging cohort is US$1,600, the lowest of all the countries in Part 3 and mirroring China's trajectory.

Unlike China, however, the economic sectors pushing Vietnam's growth remains at low-value market segments and its outlook is weak. A large share of Vietnam's economy remains agrarian,

[d] *Number of elderly age 65+ per 100 people between the ages of 20 to 64*

and agriculture's share of GDP remains high at 19 percent, double that of Thailand, Malaysia, and China. Industry and manufacturing account for only 37 percent of GDP, where it has plateaued over the last several years.[88] Coupled with population aging, this could be a drag on growth into the future—an aging demography will reduce the size of the future labor force, and without significant gains from technological accumulation and increased productivity, economic activity can stagnate.

Taken together, these factors will make it harder for the government to raise revenue to fund investments and age-related public programs, and hamper aging residents' abilities to save for and fund future services. This is especially true of health-care services and treatment, where Vietnam is experiencing the epidemiological transition to non-communicable diseases. The concern is that persistent low wages will be inadequate to pay for the prolonged nature, and subsequent treatment, of non-communicable diseases. Already, two thirds of the total population is afflicted with at least one chronic disease, the common ones being chronic obstructive pulmonary disease, hypertension, and cardiovascular disease.[89, 90] The prevalence of chronic diseases compounds the risk factors for physical disability; already, 45 percent of older adults experience moderate levels of physical limitation, while 21 percent report significant levels of physical limitation.[91]

It wasn't until 2009 that the government implemented a public health insurance plan with the goal of universal coverage, but as of 2015, only 70 percent of the population had been enrolled.[92] The government has also provided social assistance for the vulnerable elderly, those aged 80 and above and without family to rely on, but as of 2009, that program covered only 538,000 elderly persons.[93] As a result, out-of-pocket spending remains high, with the elderly especially vulnerable. Between 2002 and 2010, total out-of-pocket expenditures on health services increased over 260 percent in local currency unit nominal terms. In the 10 years between 2004 and 2014, out-of-pocket health expenditure averaged 85 percent of private expenditures on health, indicating the lack of comprehensive insurance programs to cover medical costs.[94, 95]

Along with the large gaps in coverage and financing in the public health insurance programs, Vietnam's health care infrastructure remains underfunded and underdeveloped. Public health-care expenditures account for only 3.8 percent of GDP, comparatively lower than that of the other emerging economies in Part 3, though its infrastructure indicators of 31 beds and 12 doctors per 10,000 people are about the same as the other emerging economies. Public hospitals dominate the health care system at a ratio of about 10 public hospitals to one private hospital, which reflects the low service demand and high cost for private sector services. However, only four state hospitals provide specialist care for older adults, and only 30 district hospitals have geriatric departments.[96, 97]

Between 75 percent and 80 percent of all employment is in the informal sector across all economic sectors, in both in urban and rural areas.[98] The primacy of informal employment tends to keep wages depressed even as the economy grows. As a result, many people are unable to pay for age-related health-care services and treatment. The government's programs for old-age income support provide very little in the way of supplementing labor income, which accounts for 70 percent of total income, or income from family transfers. Its contributions-based pension scheme, implemented in 1995, was mandatory for formal sector workers, public servants, and the military and police, but voluntary for everyone else, effectively excluding many from formal coverage. It wasn't until 2013 that the government implemented a needs-based old-age pension for citizens aged 60 and above, targeted to those living alone and with no family support or any other form of pension.[28, 99] Even the formal economy has low pension coverage; its mandatory contribution system only covers 20 percent of the formal labor force (9.3 million people), a majority of whom are public servants.[28]

As a result of these coverage gaps, over 80 percent of older adults have no formal pension because they've been ineligible to contribute.[100] Only 50 percent of elderly males and 30 percent of elderly females in urban areas between the ages of 70 and 74 are eligible for a pension. In rural areas, only 25 percent of males between the ages of 70 to 74 are eligible, while for rural females, the eligibility is 6 percent.[28] As a result, income poverty rates among Vietnam's elderly have been increasing with age, especially as the onset of physical and mental disabilities prevents them from being able to work.

Table 10: Vietnam's Income Poverty Rate for the Elderly (% of Elderly)

Age Group	61-70	71-80	81+
Overall	20	25	30
Urban	5	8	14
Rural	23	32.5	36

Source: World Bank[101]

The country's underdeveloped health care system, low benefits for services, and high out-of-pocket expenses may be the reasons why 62 percent of Vietnam's elderly still prefer their adult children or other immediate family members to provide daily caregiving and long-term support.[102] Two thirds of all elderly still live in rural areas, which lack accessible, affordable alternatives to family care. The difficulty is especially pronounced for older women. An estimated 87 percent of whom live alone, though a majority have at least one child living close by.[100]

CALL TO ACTION: ENABLING SOCIAL AND ECONOMIC VALUE

The period of economic growth following World War II set these countries on diverse development trajectories. Favorable demographics and the right mix of pro-growth policies laid the foundation for increasing prosperity. While some rapidly and successfully leveraged the forces of globalization to grow their economies and wealth, others have struggled to integrate and capture a greater share of the rapid global economic expansion.

All the countries in Part 3 have provided services and resources to enable their citizens to remain healthy and productive. China's government is well aware that its legitimacy rests on continued growth and stability and that it must work hard to ensure a healthy and productive labor force. The same can be said of the other young, but rapidly aging emerging economies examined here. However, the policy framework is one that primarily promotes economic growth and human capital development, which skews resources towards the younger labor force and away from the elderly.

Indeed, this can be seen in the way governments implemented their health care and pension policies, which favors young workers instead of the aging cohorts.

To their credit, all of the countries examined here have recognized, to a greater or lesser degree, that older adults need a range of health care and long-term care services and other resources to remain healthy, active, and engaged. They also recognize that delaying action to provide these resources will lead to higher costs in the long term through earlier onset of chronic illness, higher out-of-pocket expenses, higher incidence of physical disability, poor mental health, and poverty, all of which are drags on the economy and on society generally. As such, these nations' efforts to redirect resources to their aging cohorts provides key lessons to emerging economies around the world that are also experiencing population aging and looking for ways to support their future aging citizens.

First, while their intentions were admirable, the timing of policy implementation and the scope of eligibility of coverage has led to inadequate and inequitable distribution of benefits for old age. Slow implementation excluded older workers and many in the aging cohort from availing themselves of services. When Korea decided to scale up its pension scheme from covering only formal sector employees to covering the entire labor force, it took the government 10 years to fully implement the new program. Because of the delay, workers retired before being included in the program, while others retired

Table 11: Social Security Programs in Asia

	Income		Health	
	Social Program	**Social Assistance**	**Social Program**	**Social Assistance**
China	• Basic urban pension (mandatory contribution) • Scheme for rural and non-salaried urban residents (voluntary)	Rural and non-salaried urban residents (CNY70/ month)	• Social Insurance 2011 • Scheme for rural and non-salaried urban residents (2016)	-
Korea	National Pension Scheme (mandatory contribution)	Basic old-age pension; income-tested (up to KRW204,000/ month)	National Health Insurance (mandatory contribution)	Means-tested; medical aid programs
Thailand	• Social Insurance Formal Sector (mandatory) • National savings fund informal sector (voluntary)	Old-age pension social assistance (Bt600 and up)	• Social insurance formal sector (mandatory) • Social insurance, informal (voluntary)	Universal coverage scheme
Vietnam	Social insurance (mandatory)	Old-age pension assistance; no family support (VND405,000 and up)	Social insurance (not fully implemented; contributory)	-
Malaysia	Provident Fund: voluntary for homemakers, self-employed	Means-tested; no family support (MYR300/month)	Provident Fund: voluntary for homemakers, self-employed	Means-tested; no family support

Source: Social Security Administration (2016)[103]

with inadequate benefits, or none at all due to ineligibility; many workers eligible for the program were left with too little time to make any substantial contributions. Governments must be cognizant that the longer they wait to implement programs, the more people are left ineligible or with too little time to participate.

Second, in theory, contributory systems can provide a stable income in old age as well as sustainable financing for the program. But failure to take into account the complexity and variations within a country can reduce the scope of workers' coverage and eligibility. Thailand and Vietnam, for example, have contributions-based old-age social insurance programs, but this hardly works in places with large numbers of informal, seasonal workers, and non-workers (like housewives) who have little to no wages to put aside as savings for retirement.

Third, universal health insurance programs are of little value if the environment does not have the infrastructure, services, or professionals to provide adequate, high-quality treatment. Thailand implemented a universal health care insurance plan that has high coverage rates and China's Social Insurance Law was aimed at greater health care coverage. But many rural areas, where a majority of the elderly live, are underdeveloped and far from urban centers with facilities and services. It's the reason why out-of-pocket costs are high and health-care resource utilization has fallen, increasing disease prevalence and associated treatment costs. In the end, it is highly unlikely that effective geriatric specialties can be supported by persistently suboptimal health care infrastructure.

Finally, the private sector is often unable to provide meaningful alternatives without the market-driven incentives complemented with a strong regulatory framework to mitigate excessive price increases. Market forces tend to drive up costs of health care while private insurers insufficiently cover the wide range of health and long-term care services older adults need. In the context of weak regulatory frameworks, private sector forces tend to exclude vulnerable groups, especially the elderly. This was China's experience after the country shifted all provisions (including pensions, unemployment, health, and injury) to the private sector. Poor enforcement led to under-contribution by employers. Health-care costs skyrocketed because hospitals were able to set prices, while insurance programs failed to cover treatment costs. And poor coordination and lack of technical capabilities left many people unable to access their pension and health-care benefits outside of the city in which they worked.

What's needed is a framework that sees the elderly as assets with economic and social value to be leveraged while facilitating the region's continuing cultural traditions of family support and aging in place. This would result in more robust policies that empower two cultural elements that are common to all these countries. The first is the desire of the elderly to remain relevant and engaged in their families, in their communities, and in the workforce. Even with economic and social modernization, older adults intrinsically desire

purposeful activities and meaningful social relationships. East Asia's deep rootedness in Confucianism, for example, dictates productive relationships with family and community. It's a major motivation for the elderly to be involved for as long as they can supporting their adult children and one reason why older adults continue working well after the traditional retirement age.

The second cultural element that can be leveraged is the families' desires to fulfil their filial obligations to support elderly family members. The cultural expectation to provide old age support can take many forms, from direct daily living and long-term care to financial support. No matter what form intergenerational support takes, governments should facilitate them and reward families who provide support for their elderly relatives.

Together, these two cultural elements should be strong factors to motivate governments to provide an aging experience more dignified and more desired by Asia's older adults. By leveraging the cultural values that will keep elderly adults engaged and employed, governments and institutions will be better positioned to capture their economic and social value.

"It's a major motivation for the elderly to be involved for as long as they can."

Towards More Successful Aging Environments

Moving towards successful aging in Asia requires reforming the framework under which all policies are designed and implemented. The current framework is one that seeks to maintain high levels of economic growth, greater job opportunities, and good health outcomes among the younger cohorts. For several decades, this has worked well to increase the prosperity of these Asian countries, improve health outcomes, raise living standards, and provide more opportunities to participate in the expanding economy.

But it has also left aging cohorts without the adequate infrastructure and financial support for age-related health care and long-term care. Part 3 highlights how the policy choices within each country may have served the earlier booming demographic dividends, but remain inadequate, inaccessible, and unaffordable to meet the needs of older adults today. The fundamental shortcoming of these policies is that they are reactive, focusing on building up the ecosystem of health-care services and facilities only after the public needs become critical.

Asia's elderly wish to be active and productive for the families and communities in which they reside. Facilitated by age-friendly environments and policies, their active engagement not only helps delay age-related physical and mental decline but provides personal financial support and contributes to the overall economy through their purchasing of goods and services. By building on the cultural values of filial piety and intergenerational support among adult children, policy makers can both improve the experience of Asia's aging cohort and also capture their untapped economic and social value.

TWO COMPONENTS OF AGE-FRIENDLY ENVIRONMENTS

Moving away from reactive policy making towards more holistic and strategic solutions rests on two key components. First, it requires a strong message that older adults have economic and social value to contribute when they remain healthy and engaged in their families, communities, and workplaces. In Phase 1 of this aging series we highlighted the Singapore government's positive agenda setting with their message that "older folks are an asset."[104] Singapore's framework for its aging population seeks to insure longer and healthier lives for its aging population by supporting the primacy of the family's responsibility for the long-term care needs of its elderly members. This shows that a championing government and clear policy direction can be effective in overcoming institutionalized ageist attitudes and providing robust aging environments.

The second component requires putting in place the key infrastructure pillars that enhance and facilitate physical and psychological

well-being and active, purposeful aging. The World Health Organization (WHO) outlines eight domains for more age-friendly environments, all of which focus on empowering older adults to pursue activities in a physical and social environment that promotes a sense of rootedness and ease of mobility, encourages employment, and promotes respect and social inclusion.[105]

Similarly, the Milken Institute Center for the Future of Aging laid out nine pillars in its 2017 Best Cities for Success Aging (BCSA) report that act as good yardsticks to measure the success or failure of cities to provide age-friendly environments.[106] The top-ranked cities, Provo-Orem in Utah and Iowa City in Iowa, were judged successful because they were intentional about leveraging the prevailing local culture of healthy habits, active lifestyles, and social engagement, primarily through tapping into the existing networks of community-based services for education and employment.

Table 12: WHO's Eight Interconnected Domains of Urban Life

Domain	Characteristics
Community and health care	Easy access to affordable aged care and health services in communities or convenient locations
Transportation	Easy of mobility through accessible, affordable, and safe public transportation services
Housing	Affordable, age-friendly, and safe housing with close proximity to community centers and social and health-care services
Social participation	Access to social, leisure, educational, and other activities in communities or accessible locations
Outdoor spaces and buildings	Age-friendly, safe, clean, mobile-friendly public infrastructure
Respect and social inclusion	Creating inclusive societies, overcoming ageist attitudes, and promoting intergenerational engagement
Civic participation and employment	Ample opportunities to work and volunteer across industries and institutions
Communications and information	Accessible and easy-to-read information resources through print, broadcast media, personal contact, or computer and mobile technology

Table 13: Indicators from the Milken Institute's Best Cities for Successful Aging

Categories	Indicators
General livability	• Affordable cost of living • Safety: crime, fatal accidents • Weather • Internet access
Health care	• Accessibility and affordability • Health care infrastructure: hospitals, beds, services, specialized units and treatments • Health-care professionals
Wellness	• Healthy habits and lifestyle behaviors • Physical and mental health outcomes • Geography and environment: air quality • Affordable and available fitness and recreational centers
Financial Security	• Elderly Income • Banks and financial institutions • Bank deposits • Tax rates • Small business growth
Education	• Educational attainment • Distance and online learning • Number of universities and colleges • Total enrollment
Transportation and Convenience	• Walkability • Commuting times • Public infrastructure investments • Public transportation fares • Access to goods, services, and food • Special needs transportation
Employment	• Percent of older adults 65 and above employed • Elderly unemployment rate • Employment growth • Services and manufacturing output
Living Arrangements	• Older adults in family homes • House and rental prices • Cost and availability of hospice and institutional care and continuing care facilities • Home health-care service providers and assisted living caregivers • Cost of adult day services
Community Engagement	• Elderly employment rates • Volunteer rates and opportunities • Number of public libraries • Number of arts, entertainment, civic, religious, and recreational facilities • Funding for older adults

THE VALUE IN AGING

In Asia, the policies that build the aging environment focus largely on the tangible infrastructure, including housing and health-care facilities, and the services offered by communities. But rarely do they address the hurdles that prevent the elderly from engaging more fully in those activities. Too often the policy intention is so focused on making certain that aging adults have their health care needs met through medical facilities and specialty services that they overlook the ways the elderly can provide value by leading healthy and active lives. Because of these often retroactive policies discussed in the previous sections, aging policies can be perceived as public expenditures. The value of aging is not well addressed and understood. Holistic and systematic aging policies that incorporate Asian culture, values, and practices can certainly address many Asian nations' aging challenges.

The family, the workplace, and the community provide the three most important contexts for introducing the age-friendly policies described by the World Health Organization and the Best Cities for Successful Aging report. Families are the immediate source of old-age support, be it through direct daily care or financial support. The workplace provides both the avenues for older adults to remain active and for society to capture their economic value. Communities provide the network of health-care services, information, and other resources the aging cohort need to remain healthy and productive.

FAMILY

The family unit is the immediate context that defines the aging experience in Asia. For generations, mutually beneficial intergenerational co-residence was the mechanism through which aging adults received financial, social, and long-term care support. Co-residence provided older members an avenue to remain engaged, helping maintain physical and psychological well-being. For their adult children, it provided an avenue to support their own families, especially their young children. For the elderly, it provided a way for their own health care and long-term care needs to be monitored and attended to.

Today, these living arrangements are undergoing a substantial transformation: families tend to be more separated, housing units are smaller and more expensive, and the costs of daily living have increased the financial burden on adult children. While multi-generational households feature less prominently today, the underlying family and cultural value of filial duty to parents remains strong and provides a key starting point for more systematic and holistic aging policies.

In China and Vietnam, for example, a majority of people still feel that adult children and family members should be most responsible for the day-to-day caregiving of elderly members. That said, government agencies should not leave family members to be the sole providers of old-age support. Instead, they should facilitate the sense of filial obligation and the desire for parents to remain supportive to their children and their families.

China and Vietnam's policies to support the elderly have not always aligned with this framework. They have been too focused on patching the immediate infrastructure, services, and financial support needs, while largely ignoring the fact that facilitating traditional values could be beneficial to the family and cost less in the longer term. Singapore's public housing policies empower the family unit by giving married couples financial incentives and preferential treatment to choose homes close to their parents and gives preferential treatment to older adults who want to move to homes closer to their children. With this arrangement, parents can support their adult children with day-to-day needs, like household chores and child care, while the adult children can monitor the physical and mental health status of their parents.

Such a framework would improve the aging experience in China, where government policies have skewed family structures to what's commonly known as the 4-2-1, in which two married adults support four aging parents and their own child. The current system is the result of a policy mentality that only responds to immediate public needs. The result is a patchwork that can neither fulfill basic needs nor foster the social engagement of the elderly needed to unlock their social and economic value.

Housing policies shouldn't just be about providing a physical space, but also a tool to leverage family interactions. These can take the form of larger multigenerational dwellings or a cluster of smaller units with intentional allocation preference given to multigenerational families who want to live close to each other. The former would be ideal in less populated rural areas, while the latter would support multigenerational families in more densely populated urban centers. Either way, housing communities should be designed in such a way that older adults can provide daily living assistance to their children and their families, while they themselves can be assured that someone will monitor their well-being.

WORK

Gainful and meaningful employment doesn't just provide financial support, it fulfills the basic desire to remain active and engaged in society and improves mental and physical health outcomes. This helps the economy and society as a source of taxable income and as a stimulus for demand for goods and services. More importantly, it provides older adults with a sense of purpose and relevance that

mitigate the social isolation, depression, and suicidal thoughts associated with being disengaged, unemployed, and unproductive.

In countries where the informal economy remains large, as is the case in China, Vietnam, and Thailand, governments can support agricultural labor (where most workers are seasonal or "informal sector laborers") by expanding health-care facilities and improving services in rural areas. At the same time, as national and global economies evolve, innovation and new technologies will reduce the demand for labor, and many of today's formal sector workers will become the proprietors or independent contractors of tomorrow's innovative economy. Expanding pension programs and health insurance schemes for these workers can greatly facilitate this transition. In addition, this will promote the longevity of elderly workers' professional lives.

Within the formal sector, governments can reduce or eliminate the labor market rigidities that have excluded older workers for too long. For example, retirement policies should be adjusted to reflect that people are living longer and healthier lives. Given Korea's high life expectancy and the relatively good health of its citizens, the country's mandatory retirement age (60) is low, but lingering ageist attitudes prematurely force physically and mentally capable workers out of the labor force. In Singapore, by contrast, where the current retirement age is 62, companies must offer older employees re-employment up to the age of 65, which will soon be raised 67. Japan will raise its current retirement age of 62 to 65 by 2025.

At the same time, some businesses are taking the initiative on their own. EverYoung, a content monitoring technology company in Korea, only hires older adults aged 55 and above, but maintains flexible and shorter working hours.[107] Steps like this are very important for a country like Korea where high suicide rates stem from financial hardships and social disengagement. Likewise, Isoda Metal in Japan is intentional about hiring and retaining older adults because of the value of their skills to the business and to younger employees.[108] These companies have recognized the value of older workers and championed their participation, capturing the economic value of older adults.

COMMUNITY

The local community is the space that provides the health care infrastructure and services to sustain healthy living and the opportunities for employment and social engagement. But among the countries in Part 3, governments fall well short of enabling elderly participation in communities because they see aging as a drain on valuable public resources rather than a source of value.

In Asia, the desire to "age in place" is a strong cultural value that could be leveraged to capture economic and social benefits. But

among these countries, the infrastructure providing the health-care services and pension benefits is often too inaccessible, too expensive, or too underdeveloped. The dominance of the private health sector in Korea, for example, has left many of the newest treatments uncovered by insurance, while the delay in implementing its universal pension policy left many older adults without the means to pay out-of-pocket costs related to their treatment. In China, the sheer vastness of its geography and stark differences between rural and urban areas has resulted in an extremely inequitable infrastructure and service provision. Health insurance coverage for rural residents may be near universal, but the high out-of-pocket costs of peripheral expenses discourages health care utilization. While subsequent policy reforms have sought to plug these gaps, they are still very much focused on the immediate needs of the individual rather than on building a more robust aging environment.

The WHO's eight domains and the 2017 BCSA report provides guidance on how to build more holistic health care and aging environments. Iowa City scored at the top in the category of health care for small cities because of the high ratio of primary care physicians to residents, low cost of treatment, high-quality institutional care and nursing homes, and a strong specialized health care sector in orthopedic surgery, geriatric care, hospices, and Alzheimer's units. Likewise, the top-ranked large city in this category, Durham-Chapel Hill in North Carolina, also provides strong specialty services and facilities, has a strong primary care system, and some of the best hospitals in the country.

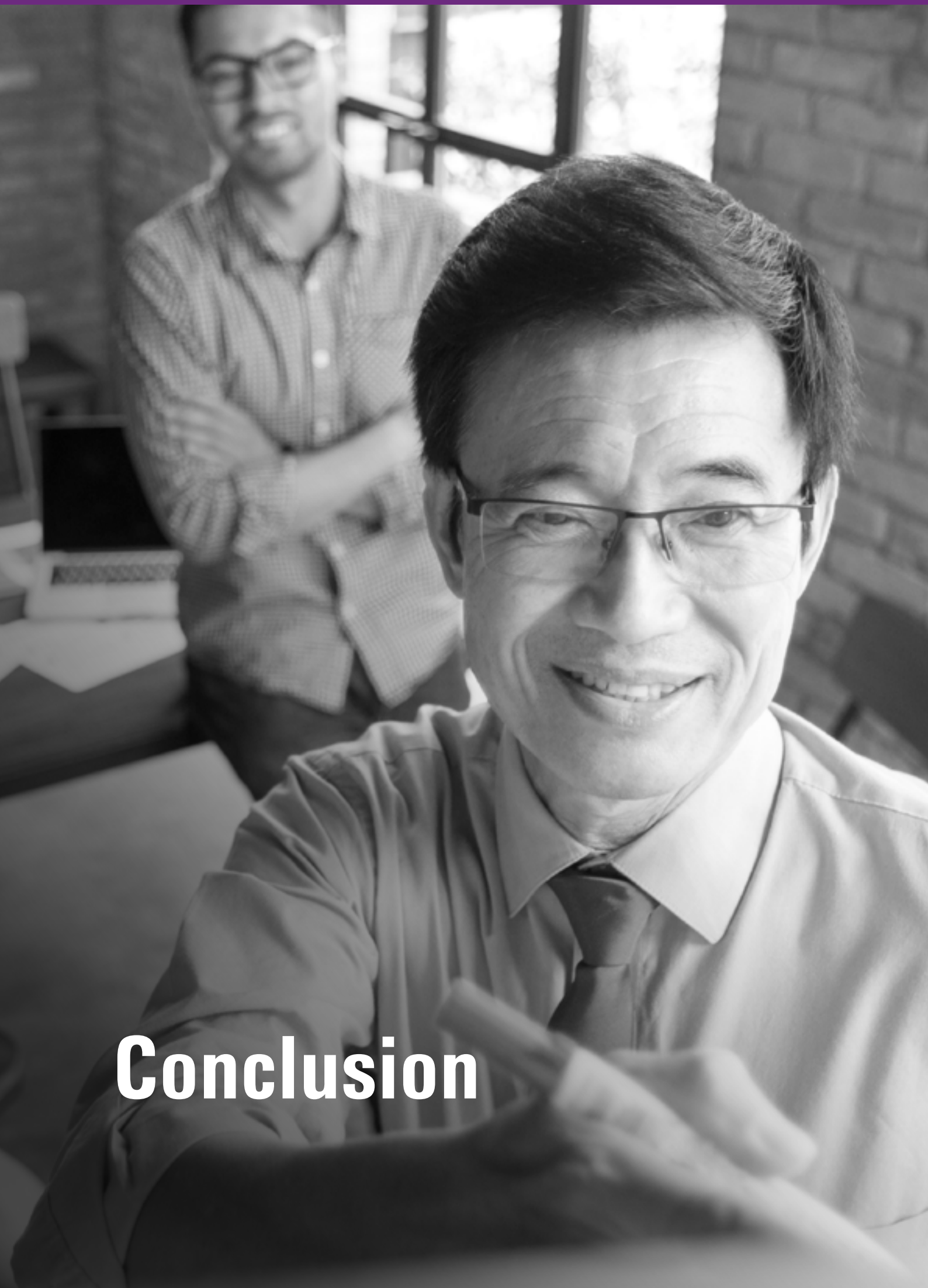
But more than just providing services and treatment, robust health care environments must be aligned with an enabling of the cultural values of residents. For example, institutional care remains a less preferred option for long-term care maintenance among Asia's older adults. Even if institutional care provides the around-the-clock monitoring and caregiving support for daily activities, older adults would rather age in their homes and their communities supported and monitored by family members and community friends. This is especially true in places where institutional care may be costly, poor quality, or in an undignified living environment. The provision of resources and services that cater to culturally-desired preferences would improve the aging experience.

A good example of home-based elderly care is the Dutch organization Buurtzorg Nederland in which nursing teams provide the wide range of high-quality services directly in the patient's home. Community services like these reduce the burden on children to be the sole caregivers to their parents while providing supportive long-term care directly in their parents' home.

In the 2017 BCSA ranking of age-friendly cities, in the category of "community engagement," Des Moines in Iowa and Fairbanks is Alaska ranked top. Their high scores were based on their offering older adults access to activities they wanted to pursue, no matter what their life stage. These include a plethora of cultural amenities,

social organizations, public libraries, recreational facilities, and other volunteer and civic opportunities to keep them active, engaged, and healthy. Cities looking to build more robust aging environments should go beyond appropriating resources and services just to meet immediate needs. Rather, policy design and implementation should take into account the desires of the elderly to interact, participate, and engage in society long term as they age.

"More than just providing services and treatment, robust health care environments must be aligned with and enabling of the cultural values of residents. "



Conclusion

The pattern of today's population aging is the natural outcome of economic growth and social modernization. Throughout modern history, improvements in health care and nutrition have increased life expectancy, while greater opportunities provided by expanding economies have put downward pressure on fertility rates and family formation. Asia's aging experience conforms to this pattern, but with a distinct difference. What is unique about the Asian experience is the extremely rapid pace at which its population aging has occurred. The meteoric rise of Asia's economies and resulting social and cultural disruptions discussed in the previous sections have caught government planners, lawmakers, and institutions off guard and laid bare a multitude of financial and program gaps. Those suffering for this mismanagement are not just the elderly, though they are the most vulnerable. Every age group of these societies is feeling the impact, and all will feel the burden grow unless steps are taken now.

Now is the time for governments to go on the offensive and jump ahead of these demographic trends. Policymakers can no longer afford to be merely reactive, providing the infrastructure and service fixes only when citizens' demands become urgent. Rather, governments must leverage and build around the inherent cultural values of older residents, while engaging with their adult children to help them fulfil filial obligations to their elderly family members. Facilitating these intergenerational and social relationships is the key to improving the aging experience and enjoying the economic and social benefits that will come as a result.

By mid-century, the number of older adults in Asia will fall just shy of one billion people. But instead of being perceived as a huge burden, it should be taken on as a great opportunity. One billion active, healthy, and engaged individuals economically productive in the labor force and socially productive in families and communities have tremendous value, provided they have the right environment and institutional framework.

This is the upside of aging. Aging's natural progression has value to be captured. Longer, healthier lives provide tremendous opportunities for society. As populations inevitably age, today and tomorrow's older cohorts will need to be more empowered to be the driving force behind continued economic growth and social progress.

ABOUT THE AUTHORS

Perry Wong is managing director of research at the Milken Institute. He is an expert in regional economics, development, and econometric forecasting and specializes in analyzing the structure, industry mix, development, and public policies of a regional economy. He designs, manages, and performs research on labor and workforce issues; the relationship between technology and economic development; and trade and industry, with a focus on policy development and implementation of economic policy in both leading and disadvantaged regions. Wong is actively involved in projects aimed at increasing access to technology and regional economic development in California and the rest of the United States. His work extends to the international arena, where he is involved in regional economic development in greater China and other parts of Asia. Prior to joining the Institute, Wong was a senior economist and director of regional forecasting at Global Insight Inc. (formerly Wharton Econometric Forecasting Associates, Inc.), where he managed regional quarterly state and metropolitan area forecasts and provided consultation. There, he designed regional modeling systems and contributed to regional economic impact studies on such topics as budget reduction and health care reform. Wong has conducted many research studies regarding regional economic development and policy impacts on the public and private spheres. These include the impact of U.S. budget and trade policy on key U.S. industries and regions; health care reform and its implications for the federal budget; the Kyoto Agreement and its impact on the well-being of U.S. regional economies; and the pharmaceutical industry's contribution to Pennsylvania's economy.

Amos Garcia is a research associate at the Milken Institute Asia Center based in Singapore. His current research focuses on aging, financial innovations, and FinTech in the Asia-Pacific region. Garcia joined the Asia Center in 2016, after completing two years of comparative economic policy, public finance and political economy research at the Lee Kuan Yew School of Public Policy. He has completed advocacy and strategy work for the European Chamber of Commerce in Singapore, economic research and political reporting for the Philippine Central Bank, and program development for the National Alliance for Public Safety GIS Foundation in Washington, D.C. Garcia studied international relations and economics at Calvin College in Michigan and completed his master's in public policy with a specialization in economic policy from the Lee Kuan Yew School of Public Policy, National University of Singapore.

ENDNOTES

1. Benedict Clements, Kamil Dybczak, Vitor Gaspar, Sanjeev Gupta, and Mauricio Soto, "The Fiscal Consequences of Shrinking Populations," International Monetary Fund: Staff Discussion Note. October 2015.
2. United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects, 2016. Projection at Medium Variant.
3. Pew Research Center, "Attitudes about Aging: Global Perspectives," January 30, 2014. http://www.pewglobal.org/2014/01/30/attitudes-about-aging-a-global-perspective/
4. Perry Wong, Amos Garcia, Belinda Chng, and Arielle Burstein, "Redefining Traditional Notions of Aging: Embracing Longevity Across Cultures," Milken Institute, 2016.
5. Donald Cowgill, "The Aging of Populations and Societies," The Annals of American Academic of Political and Social Science, Vol. 415, September 1974. http://www.jstor.org/stable/1041093
6. Jagdish Bhagwati, "The Miracle that did happen: Understanding East Asia in Comparative Perspective," Keynote Address at Cornell University Conference on "Government and Market: The Relevance of the Taiwanese
7. Robert Fogel, "The Impact of the Asian Miracle on the Theory of Economic Growth," National Bureau of Economic Research. May 2009. http://www.nber.org/papers/w14967
8. Jacob Siegel, "On Demography and Aging," Demography, Vol. 17, No. 4. November 1980. https://link.springer.com/article/10.2307/2061150
9. Kevin Kinsella and David Phillips, "Global Aging: The Challenge of Success," Population Reference Bureau, Population Bulletin. Vol. 60. No. 1. 2005. http://www.prb.org/pdf05/60.1globalaging.pdf
10. United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects, 2015.
11. The Economist, "The flight from marriage," 20 August, 2011. http://www.economist.com/node/21526329
12. Statistics Bureau, "Statistical Handbook of Japan 2016," Government of Japan. 2016. http://www.stat.go.jp/english/data/handbook/c0117.htm
13. KOSIS, "Mean Age at First Marriage of Bridegroom and Bride for Provinces," Government of Korea. 2017. http://kosis.kr/eng/statisticsList/statisticsList_01List.jsp?vwcd=MT_ETITLE&parmTabId=M_01_01#SubCont
14. Department of Statistics Singapore, "Population Trends 2016," Government of Singapore. 2016. http://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications_and_papers/population_and_population_structure/population2016.pdf
15. Asia Research Institute, "Marriage in Asia: Asian Family Matters - Changing Family in Asia Cluster, Research Brief Series No. 20," National University of Singapore. October 2014. http://www.ari.nus.edu.sg/docs/downloads/Reports-and-Proceedings/CF-ResearchBriefSeriesNo20.pdf
16. Data Bank, "Gender Statistics," The World Bank. http://databank.worldbank.org/data/reports.aspx?source=Gender-Statistics
17. United Nations, Department of Economic and Social Affairs, Population Division, World Urbanization Prospects. 2014. https://esa.un.org/unpd/wup/CD-ROM/
18. Victor Goh, "Aging in Asia" A cultural, socio-economic, and historical perspective," The Aging Male. June 2005.
19. World Bank East Asia and Pacific Regional Report, "Live Long and Prosper: Aging in East Asia and Pacific," World Bank Group. 2016. https://openknowledge.worldbank.org/bitstream/handle/10986/23133/9781464804694.pdf
20. World Health Organization and Global Health Observatory data repository, "World Health Statistics 2015," and "Hospital bed density: Data by country."
21. World Bank Indicators, "GDP growth (annual %)," 2016. http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?view=chart
22. OECD, "Economic Survey of Korea 2016," 2016. https://www.oecd.org/korea/economic-survey-korea.htm
23. Alexander Martin, "Japan's Elderly Face Growing Risk of Poverty," Wall Street Journal. August 10, 2016. https://www.wsj.com/articles/japans-elderly-face-growing-risk-of-poverty-1470870622?mg=prod/accounts-wsj
24. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdfEndFragment
25. Soonman Kwon, Tae-jin Lee, and Chang-yup Kim, "Republic of Korea: Health System Review," Asia Pacific Observatory on Public Health Systems and Policies, World Health Organization. 2015. http://www.wpro.who.int/asia_pacific_observatory/hits/series/korea_health_systems_review.pdf?ua=1
26. World Bank, "Hospital beds per 1,000," http://data.worldbank.org/indicator/SH.MED.BEDS.ZS?view=chart
27. Asian Development Bank, "Pension Systems in East and Southeast Asia Promoting Fairness and

Sustainability," 2012. https://www.adb.org/sites/default/files/publication/29954/pension-systems-east-southeast-asia.pdf

28. Soonman Kwon, Tae-jin Lee, and Chang-yup Kim, "Republic of Korea: Health System Review," Asia Pacific Observatory on Public Health Systems and Policies, World Health Organization. 2015. http://www.wpro.who.int/asia_pacific_observatory/hits/series/korea_health_systems_review.pdf?ua=1
29. Im-Oak Kang, Chong-Yon Park, and Yunhwan Lee, "Role of Healthcare in Korean Long-Term Care Insurance," Journal of Korean Medical Science. Vol. 27 (Suppl). May 18, 2012. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3360173/
30. Kyeong-ae Choi, "Korean elderly carry highest debt burden," The Korea Times. November 18, 2015. http://www.koreatimes.co.kr/www/news/nation/2016/11/488_191273.html
31. Young Jun Choi, "Long-term care for older persons in the Republic of Korea: Development, challenges and Recommendations," UNESCAP. 2015. http://www.unescap.org/sites/default/files/Long-term%20care%20for%20older%20persons%20in%20the%20Republic%20of%20Korea.pdf
32. Erin Hye-Won Kim, "Public transfers and living alone among the elderly: A case study of Korea's new income support program," Demographic Research, Vol. 32. No. 50. 2015. doi: 10.4054/DemRes.2015.32.50
33. Mi-ra Won and Yun-Jung Choi, "Are Koreans Prepared for the Rapid Increase of the Single-Household Elderly? Life Satisfaction and Depression of the Single-Household Elderly in Korea," The Scientific World Journal. October 30, 2013. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3832973/
34. OECD, "OECD Economic Surveys: Korea Overview," May 2016. https://www.oecd.org/eco/surveys/Korea-2016-OECD-economic-survey-overview.pdf
35. United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects, 2016. Projection at Medium Variant.
36. World Bank Indicators, "GDP growth (annual %)," 2016. http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?view=chart
37. United Nations Development Programme, "Poverty Reduction," UNDP in China. http://www.cn.undp.org/content/china/en/home/ourwork/povertyreduction/overview.html
38. World Bank Indicators, "GDP (current US$)," 2016. http://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart
39. William Hsiao, Mingqiang Li, and Shufang Zhang, "Universal Health Coverage: The Case of China," United Nations Research Institute for Social Development, November 2014. http://www.unrisd.org/80256B3C005BCCF9/%28httpAuxPages%29/E15A4915BFDBEE8AC1257D9E0033BACE/$file/Hsiao%20et%20al.pdf
40. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdf
41. China Health and Retirement Longitudinal Study (CHARLS), "Challenges of Population Aging in China: Evidence from the National Baseline Survey of the China Health and Retirement Longitudinal Study," in the Wall Street Journal, May 2013. http://online.wsj.com/public/resources/documents/charls0530.pdf
42. China Joint Study Partnership, "Deepening Health Reform in China: Building High-Quality and Value-Based Service Delivery," 2016. https://openknowledge.worldbank.org/bitstream/handle/10986/24720/HealthReformInChina.pdf
43. Zhanlian Feng, Chang Liu, Xinping Guan, and Vincent Mor "China's Rapidly Aging Population Creates Policy Challenges In Shaping A Viable Long-Term Care System," Health Affairs (Project Hope). Vol. 31. No. 12. 2012. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3711106/
44. Dexter Roberts, "China's Rural Poor Bear the Brunt of the Nation's Aging Crisis," Bloomberg. January 5, 2017. https://www.bloomberg.com/news/articles/2017-01-05/china-s-rural-poor-bear-the-brunt-of-the-nation-s-aging-crisis
45. Asian Development Bank, "Pension Systems in East and Southeast Asia Promoting Fairness and Sustainability," 2012. https://www.adb.org/sites/default/files/publication/29954/pension-systems-east-southeast-asia.pdf
46. Yuan Yuan Fu, Yu Guo, Xue Bai, and Ernest T. C. Wing, "Factors associated with older people's long-term care needs: a case study adopting the expanded version of the Anderson Model in China," BMC Geriatrics. Vol. 17. No. 38. January 31, 2017. https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-017-0436-1
47. 47. Bao-Liang Zhong, Helen F. K. Chiu, and Yeates Conwell, "Rates and characteristics of elderly suicide in China, 2013–14," Journal of Affective Disorders. Vol. 206. December 2016. http://www.sciencedirect.com/science/article/pii/S0165032716308771
48. Jing-Bao Nie, "Erosion of Eldercare in China: A Socio-Ethical Inquiry in Aging, Elderly Suicide and the Government's Responsibilities in the Context of the One-Child Policy," Ageing International. Vol. 41. No. 4. December 2016. https://link.springer.com/article/10.1007/s12126-016-9261-7
49. Dan Zhang, Yang Yang, Yaoyao Sun, Menglian Wu, Hui Xie, Kefang Wang, Jie Zhang, Jihui Jia, Yonggang Su, "Characteristics of the Chinese rural elderly living in nursing homes who have suicidal ideation: A multiple regression model," Geriatric Nursing. March 27, 2017. https://www.ncbi.nlm.nih.gov/pubmed/28347559
50. Wei Shang, Hansheng Ding, Peng Su, Guangfeng Duan, Rong Chen, Junrui Long, Lixia Du, Chunyan Xie,

Chunlin Jun, Chaoqun Hu, Zixue Sun, Lingling Gong, Wenhua Tan "Does disability predict attempted suicide in the elderly? A community-based study of elderly residents in Shanghai, China," Aging and Mental Health. Vol. 20. No. 1. 2016 http://www.tandfonline.com/doi/abs/10.1080/13607863.2015.1031641

51. XinQi Dong, E-Shien Chang, Ping Zeng, Melissa A. Simon, "Suicide in the Global Chinese Aging Population: A Review of Risk and Protective Factors, Consequences, and Interventions," Aging and Disease. Vol. 6. No. 2. March 10, 2015. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4365956/
52. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdfEndFragment
53. Didi K. Tatlow, "China Promises Universal Pension Plan," The New York Times. November 6, 2015. https://sinosphere.blogs.nytimes.com/2015/11/06/china-pensions-plenum-elderly/?_r=0
54. Tengku Aizan Hamid, "National Policies on Ageing – Malaysia," Malaysia Research Institute on Ageing, Institut Penyelidikan Penuaan Malaysia. http://www.unescap.org/sites/default/files/Tengku%20Aizan%20Hamid%20Bangkok%202016.pdf
55. Ruhaini Binti Haji Zawawi, "Active Ageing in Malaysia," Department of Social Welfare Malaysia, Presented on 19 July 2013, Tokyo, Japan. http://www.mhlw.go.jp/stf/shingi/2r98520000036yla-att/2r98520000036yql_1.pdf
56. Safurah Jaafar, Kamaliah M. Noh, Khairiyah A. Muttalib, Nour H. Othman, and Judith Healy, "Malaysia Health System Review," Asia Pacific Observatory on Health Systems and Policies, World Health Organization. 2013. http://www.wpro.who.int/asia_pacific_observatory/hits/series/Malaysia_Health_Systems_Review2013.pdf
57. HM Lim et al., "Chasm in primary care provision in a universal health system: Findings from a nationally representative survey of health facilities in Malaysia," PLoS ONE, Vol 12. No. 2. doi:10.1371/journal.pone.0172229
58. Saidatulakmal Mohd, "Poverty issues among Malaysian Elderly," Proceedings from the International Conference on Social Sciences Research, 2014. https://worldconferences.net/proceedings/icssr2014/toc/papers_icssr2014/IC%20060Saidatulakmal%20Mohd.pdf
59. Asia Pacific Risk Center, "Advancing into the Golden Years: Cost of Healthcare for Asia Pacific's Elderly," Marsh & McLennan Companies. 2016. http://www.mmc.com/content/dam/mmc-web/Files/APRC/APRC%20Ageing%20report%20FULL.pdf
60. Suman K. Sharma, "Malaysia: Updating and Improving the Social Index," Asian Development Bank. August 2012. https://www.adb.org/sites/default/files/project-document/76082/44152-012-reg-tacr-11.pdf
61. Asia Pacific Risk Center, "Advancing into the Golden Years: Cost of Healthcare for Asia Pacific's Elderly," Marsh & McLennan Companies. 2016. http://www.mmc.com/content/dam/mmc-web/Files/APRC/APRC%20Ageing%20report%20FULL.pdf
62. Economic Planning Unit (Prime Minister's Department), "Chapter 4: Improving Wellbeing for All," in "Eleventh Malaysia Plan, 2016-2020," Government of Malaysia. 2015. http://epu.gov.my/en/rmk/eleventh-malaysia-plan-2016-2020
63. HM Lim et al., "Chasm in primary care provision in a universal health system: Findings from a nationally representative survey of health facilities in Malaysia," PLoS ONE, Vol 12. No. 2. doi:10.1371/journal.pone.0172229
64. World Health Organization, "Malaysia: WHO Statistical Profile," January 2015. http://www.who.int/gho/countries/mys.pdf
65. Jeyanthini Sathasivam, Shahrul B. Kamaruzzaman, Farizah Hairi, Chiu Wan Ng, and Karuthan Chinna, "Frail Elders in an Urban District Setting in Malaysia: Multidimensional Frailty and Its Correlates,"Asia-Pacific Journal of Public Health. Vol. 27. No. 8S. 2015. https://umexpert.um.edu.my/file/publication/00011749_129485.pdf
66. Thant Zin, Than Myint, Daw K. S. Naing, Kyaw Htay, Aye A. Wynn, Tin S. Aung, Awang S. B. Musleh, Fredie Robinson, "A study on health-related quality of life and comorbidity among elderly population in rural Sabah, Malaysia," South East Asia Journal of Public Health. Vol. 5. No. 2. http://dx.doi.org/10.3329/seajph.v5i2.28311
67. Li Min Lim, Megan McStea, Wen Wei Chung, Nuruljannah N. Azmi, Siti A. Abdul Aziz, Syireen Alwi, Adeeba Kamarulzaman, Shahrul B. Kamaruzzaman, Siew Siang Chua, and Reena Rajasuriar, "Prevalence, risk factors and health outcomes associated with polypharmacy among urban community-dwelling older adults in multi-ethnic Malaysia," PLoS ONE. Vol. 12. No. 3. March 8, 2017. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5342241/
68. Ministry of Health Malaysia, "Country Health Plan: 10th Malaysia Plan 2011-2015," Government of Malaysia. 2010. http://www.moh.gov.my/images/gallery/Report/Country_health.pdf
69. Jariah Masud, Tengku Aizan Hamid, and Sharifah Azizah Haron, "Economic well being of Malaysian elderly: Inequality Amid Prosperity," Universiti Putra Malaysia, Presentation for National Economic Outlook Conference. https://www.mier.org.my/presentations/archives/pdf-restore/presentations/archives/pdf/Jariah.pdf
70. Jariah Masud, Tengku Aizan Hamid, and Sharifah Azizah Haron, "Economic well being of Malaysian elderly: Inequality Amid Prosperity," Universiti Putra Malaysia, Presentation for National Economic Outlook Conference. https://www.mier.org.my/presentations/archives/pdf-restore/presentations/archives/pdf/Jariah.pdf
71. Department of Statistics Malaysia, "Press Release: Labour Force Survey Report, Malaysia 2016," Government of Malaysia. April 28, 2017. https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=SGZCNnMrWW9ZTEdpYys4YW0yRlhoQT09

72. Jariah Masud, Tengku Aizan Hamid, and Sharifah Azizah Haron, "Economic well being of Malaysian elderly: Inequality Amid Prosperity," Universiti Putra Malaysia, Presentation for National Economic Outlook Conference. https://www.mier.org.my/presentations/archives/pdf-restore/presentations/archives/pdf/Jariah.pdf

73. Khazanah Research Institute, "The state of households II," August 2016. http://ongkianming.com/wp-content/uploads/2016/09/KRI_State_of_Households_II_280816.pdf

74. Nasreen Khan et. al., "Explore the factors that influence elderly poverty," Journal of Southeast Asian Research, Vol. 2017, 2017. DOI: 10.5171/2017/938459

75. World Bank Indicators, "Agriculture, value added (% GDP)," 2016.

76. Asian Development Bank, "Thailand: Industrialization and Economic Catch-up," 2015. https://www.adb.org/sites/default/files/publication/178077/tha-industrialization-econ-catch.pdf

77. Government of Thailand, National Statistical Office: Ministry of Information and Communication Technology, "Core economic and social indicators of Thailand," 2012. http://web.nso.go.th/en/survey/ces/data/2012_Labor%20Force.pdf

78. National Statistical Office, quoted in "Livelihoods for elderly now a top priority," Chularat Saengpassa, The Nation. April 10, 2017. http://www.nationmultimedia.com/news/national/30311831

79. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdf

80. World Health Organization, "Thailand: health care for all, at a price," Bulletin of the World Health Organization. Vol. 88. No. 2. February 2010. http://www.who.int/bulletin/volumes/88/2/10-010210/en/

81. World Bank Group, "Closing the Health Gaps for the Elderly: Promoting Health Equity and Social Inclusion in Thailand," April 2016. http://documents.worldbank.org/curated/en/148431468299339382/pdf/AUS13326-REVISED-TITLE-HAS-CHANGED-PUBLIC-Closing-the-Health-Gaps-for-the-Elderly-English-final-for-IDU.pdf

82. John Knodel, Vipan Prachuabmoh and Napaporn Chayovan, "The Changing Wellbeing of Thai Elderly: An Update from the 2011 Survey of Older Persons in Thailand," HelpAge International. 2013. http://www.helpage.org/silo/files/the-changing-wellbeing-of-thai-elderly-an-update-from-the-2011-survey-of-older-persons-in-thailand.pdf

83. 83. Vijj Kasemsup, Thaworn Sakunphanit, Kanitta Bundhamcharoen, Sirinard Nipaporn, and Rassamee Tansirisithikul, "Chapter 4: Thai country case study," in "Health system responses to population ageing and noncommunicable diseases in Asia," World Health Organization, Comparative Country Studies, Vol. 2. No. 2. 2016. http://www.wpro.who.int/asia_pacific_observatory/country_comparative_studies/apo-ccs-ageing5b_chapter04.pdf?ua=1

84. John Knodel, Bussarawan P. Teerawichitchainan, Wiraporn Pothisiri, "Caring for Thai older persons with long-term care needs," Research Collection School of Social Sciences. Paper 1945. 2016. http://ink.library.smu.edu.sg/cgi/viewcontent.cgi?article=3202&context=soss_research

85. Yot Teerawattananon and Alia Luz, "Obesity in Thailand and its economic cost estimation," ADBI Working Paper 703, Asian Development Bank Institute. March 2017. https://www.adb.org/sites/default/files/publication/236536/adbi-wp703.pdf

86. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdfEndFragment

87. Duanpen Theerawanviwat, "Intergenerational Transfers and Family Structure: Evidence from Thailand," Ageing International. Vol. 39. No. 4. December 2014. https://link.springer.com/article/10.1007/s12126-014-9199-6

88. World Bank, "Agriculture, valued added (% of GDP)" and "Industry, value added (% of GDP)". http://data.worldbank.org

89. Sheikh M. S. Islam, Tina D. Purnat, Nguyen T. A. Phuong, Upendo Mwingira, Karsten Schacht, and Günter Fröschl, "Non-Communicable Diseases (NCDs) in developing countries: a symposium report," Globalisation and Health. Vol 10. No. 81. December 11, 2014. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4267750/

90. Jonathan Mwangi, Asli Kulane, and Le Van Hoi, "Chronic diseases among the elderly in a rural Vietnam: prevalence, associated socio-demographic factors and healthcare expenditures," International Journal for Equity in Health. Vol. 14. November 17, 2015. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4650337/

91. Daniel Mont and Nguyen Viet Cuong, "Disability and Poverty in Vietnam," World Bank Economic Review. http://documents.worldbank.org/curated/en/793841468320699746/pdf/812700JRN0WBEc00Box379814B00PUBLIC0.pdf

92. The World Bank, "Moving Toward Universal Coverage of Social Health Insurance in Vietnam." http://www.worldbank.org/en/country/vietnam/publication/moving-toward-universal-coverage-of-social-health-insurance-in-vietnam

93. Florence Bonnet, Michael Cichon, Carlos Galian, ,Gintare Mazelkaite and Valérie Schmitt, "Analysis of the Viet Nam National Social Protection Strategy (2011-2020) in the context of Social Protection Floor objectives: A rapid assessment," International Labour Organization. 2012. http://www.social-protection.org/gimi/gess/RessourcePDF.action?ressource.ressourceId=30497

94. Hoang Van Minh et. al., "Financial burden of household out-of pocket health expenditure in Viet Nam: Findings from the National Living Standard Survey 2002–2010," Social Science and Medicine, Vol. 96. November 2013. https://doi.org/10.1016/j.socscimed.2012.11.028

95. World Bank Indicators, "Out-of-pocket health expenditure (% of private expenditure on health)," 2016. http://data.worldbank.org/indicator/SH.XPD.OOPC.ZS

96. Team Finland Future Watch, "Overview of healthcare in Vietnam," ASEANup. 2015. https://aseanup.com/overview-of-healthcare-in-vietnam/

97. Tran Thi Bich Ngoca, Galina A. Baryshevab, Lyubov S. Shpekhtb, "The Care of Elderly People in Vietnam," Future Academy. 2016. http://www.futureacademy.org.uk/files/images/upload/63-WELLSO.pdf

98. Jean P. Cling, Mireille Razafindrakoto, François Roubaud, "The Informal Economy in Viet Nam," International Labour Organisation. December, 2011. http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-hanoi/documents/publication/wcms_171370.pdf

99. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdf

100. Bussarawan Teerawichitchainan et al., "What does living alone really mean for older persons? A comparative study of Myanmar, Vietnam, and Thailand," Demographic Research, Vol. 32. No. 48. 2015

101. World Bank East Asia and Pacific Regional Report, "Live Long and Prosper: Aging in East Asia and Pacific," World Bank Group. 2016. https://openknowledge.worldbank.org/bitstream/handle/10986/23133/9781464804694.pdf

102. World Bank East Asia and Pacific Regional Report, "Live Long and Prosper: Aging in East Asia and Pacific," World Bank Group. 2016. https://openknowledge.worldbank.org/bitstream/handle/10986/23133/9781464804694.pdf

103. International Social Security Association, "Social Security Programs Throughout the World: Asia and the Pacific, 2016," 2016. https://www.ssa.gov/policy/docs/progdesc/ssptw/2016-2017/asia/ssptw16asia.pdf

104. Tharman Shanmugaratnam, "Speech at the World Cities Summit," Quoted in Janice Tai, "Singapore's retirement age has to go at some point: DPM Tharman," The Straits Times, 12 July 2016. http://www.straitstimes.com/singapore/tharman-spores-retirement-age-has-to-go-at-some-point

105. World Health Organization, "Age-Friendly World." https://extranet.who.int/agefriendlyworld/

106. Paul Irving, Sindhu Kubendran, and Liana Soll, "Best Cities for Successful Aging," The Milken Institute, Center for the Future of Aging, 2017.

107. Lana Shushan, "This South Korean tech start-up hires only seniors over 55, to prove a point," Channel News Asia. http://www.channelnewsasia.com/news/cnainsider/this-south-korean-tech-start-up-hires-only-seniors-over-55-to-8940876

108. Manabu Ito, "Japan puts its seniors to work," Nikkei Asia Review, 25 August 2016. http://asia.nikkei.com/magazine/20160825-ASIA-S-SILVER-LINING/On-the-Cover/Japan-puts-its-seniors-to-work

MILKENINSTITUTE.ORG

SANTA MONICA
1250 Fourth Street
Santa Monica, CA 90401
P +1.310.570.4600

WASHINGTON
1101 New York Avenue NW
Suite 620
Washington, D.C. 20005
P +1.202.336.8930

LONDON
23 Savile Row
London W1S 2ET UK
P +44 (0) 207.043.5926

SINGAPORE
8 Marina View #15-05
Asia Square Tower 1
Singapore 018960
P +65.6636.2507

MILKEN INSTITUTE