Financing Universal Health Care in an Ageing Philippines

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Abstract

The Philippines has been experiencing unprecedented economic growth in recent years. This has fueled greater consumption among households, and greater support for the expansion of government entitlements, particularly on health and education. Behind these developments, however, is the fact that the country is slowly ageing. The Philippines' demographic window of opportunity is closing soon. In this study, we show how an ageing Philippines may impact the magnitude and direction of the resource requirement needed to finance one of the government's newest mandates, i.e., the Universal Health Care Act. As expected, population ageing will require more resources, but faster ageing does not necessarily require heavier burden among taxpayers if shared more broadly. While it may be imperative to expand human capital investments on children to fully harness the second-wave of demographic dividends, it may also be prudent to "ageing-proof" government financing to ensure the fiscal sustainability and generational equity of government services.

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Michael R.M. Abrigo[1]

1.   Introduction

The age of the first demographic dividend – the so-called demographic window of opportunity – is soon closing for the Philippines. The country, like others in the Asia Pacific region, is slowly but surely ageing. By 2035, at least seven percent of the population will be aged 65 years and older (United Nations, 2017). The demographic dividend that has sustained and boosted the country's economic growth in the recent past is ending within only a few years beyond that (c.f. Mason, et. al., 2017). In a business-as-usual scenario, this demographic shift in population age distribution may pose heavy burden on the government and on households alike (c.f. Abrigo, et. al., forthcoming).

This rising tide comes at a time when the country is enjoying an unprecedented rise in average incomes. Between 1998 and 2018, Gross Domestic Product (GDP) per capita grew, on average, by 3.4 percent annually, i.e., faster than the 1.7 percent annual growth recorded for all the countries in the world over the same period. Together with various government finance reforms, this boost in incomes has relaxed fiscal constraints that allowed the government to allocate more resources to various social services, including on health and education.

On the one hand, expanding public provision of social services, particularly investments on human capital, may be necessary pre-conditions to fully benefit from the second demographic dividend. With declining fertility, families are more likely to invest more on children's education and health, which may be complemented by government. Combined with greater savings among a growing elderly population, such expansion of the country's capital pool will positively impact workers' productivity, at least in theory. On the other hand, there may also be a need to temper government's distribution of entitlements based on at least two grounds, i.e., fiscal sustainability and generational equity. Will there be enough workers in the future to pay for the mandated benefits? Will future government benefits and contributions per person be the same as that for current generations of recipients and contributors?

Such issues of fiscal sustainability and generational equity may be particularly important in the public provision of health care services. As shown in previous studies (e.g., Abrigo, et. al., forthcoming; Zweifel, et. al., 1999), per person health spending among the elderly is generally higher relative to other generations in a population. In order to keep the benefits for the elderly at least at the level provided for previous generations, abstracting from health innovations, government spending in health care needs to grow at least as fast as the growth in the elderly population. A growing share of the elderly in the population means that prime age adults need

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to contribute greater shares of their incomes if financing of such government entitlements are paid primarily through payroll taxes.

We contribute to the discussions on the potential fiscal impacts of population ageing by looking at the case of the Universal Health Care Act in the Philippines. In 2019, the Philippines enacted a landmark law that mandates automatic enrolment of all Filipinos into the country's National Health Insurance Program managed by the Philippine Health Insurance Corporation (PHIC), among others. Early estimates by the Department of Health (DOH) pegs the cost at PhP257 billion on its first year of implementation in 2020, or about 25 percent higher than the combined expenditures of the DOH and the PHIC in 2018.

In this study, we assess how government health care spending requirements are expected to change with population ageing by relying on a set of new accounts that captures the patterns of consumption, production and redistribution among different generations in the Philippines. By interacting these patterns with the projected change in population age structure distribution in the country, we are able to assess the likely direction and magnitude of the fiscal requirement for UHC, and the related burden among taxpayers.

Our baseline results suggest that if the country's epidemiological profile, PHIC benefits, and other factors remain the same between 2015 and 2020, expanding social health insurance coverage alone requires about PhP250 billion (in constant 2015 prices, or about PhP285 billion in current prices). This number is expected to increase under more generous social health insurance packages, and with population ageing. A more rapid decline in fertility rates, although will result in faster population ageing, may relax some of these fiscal constraints. In any case, relying on payroll taxes among a narrow definition of contributors to finance the whole UHC mandate is expected to increase the burden among these workers.

The insights that we present here may be useful not only for the Philippines, but also for other soon-ageing developing countries that are embarking on similar endeavors to expand their universal health care programs. Population ageing has a substantial, direct, and persistent effect on resource requirements. The United Nations (2017) projects that an additional 23 economies will transition into an ageing/aged society by 2030, totaling 111 from only 88 in 2020. This reality may hinder fully achieving at least one of the stated global goals under the 2030 Sustainable Development Goals, i.e., achieving universal health coverage, if governments and households have not invested in "ageing-proof" their health care systems.

This report is organized as follows. In the next section, we review how health outcomes and health risks have evolved over the last twenty-five years in the Philippines. In addition to the demographic transition, the country is also experiencing an epidemiological transition characterized by the growing burden of non-communicable diseases. We next review how the age patterns of health expenditures have changed over the same period using new estimates of National Transfer Accounts for the Philippines. We then compare how healthcare financing in the Philippines has changed relative to those of other countries. In Section 4, we briefly discuss the Philippine UHC Act, and some indicators of success in achieving UHC in recent years. In the succeeding section, Section 5, we present projections for the resource requirements needed

to finance the government's UHC program under different financing regime and population trajectories. We also present the likely burden on taxpayers. The last section summarizes the main points of the paper, and provides some recommendations for policy.

2.   Health over the lifecycle

The Philippines has made important progress in improving health outcomes over the last half century (Dayrit, et. al. 2018). Advancements in personal health and general population well-being, particularly among mothers and their children, have resulted in dramatic increase in survival probability across the Filipino lifecycle. Between 1950 and 2010, for instance, life expectancy at birth among Filipinos increased by 11 years for men and by 15 years for women from only 54 and 57 years, respectively (United Nations, 2017). This increasing trend is projected to continue into the future (see Figure 1).

Despite this laudable achievement, the country still significantly lags behind more advanced economies. In Japan, the United States, and the European Union, a newborn baby is expected to live for around 80 years, compared with the Philippines' 70 years. Among its Southeast Asia regional peers, the Philippines is only ahead by a few years relative to Lao PDR and Myanmar (67 years), has about the same life expectancy as Cambodia (69 years) and Indonesia (71 years), and is behind Viet Nam (75 years), Malaysia (76 years), Brunei Darussalam (76 years), Thailand (77 years), and Singapore (83 years).

Figure 1. Survival probability by age: Philippines, 1950-2030
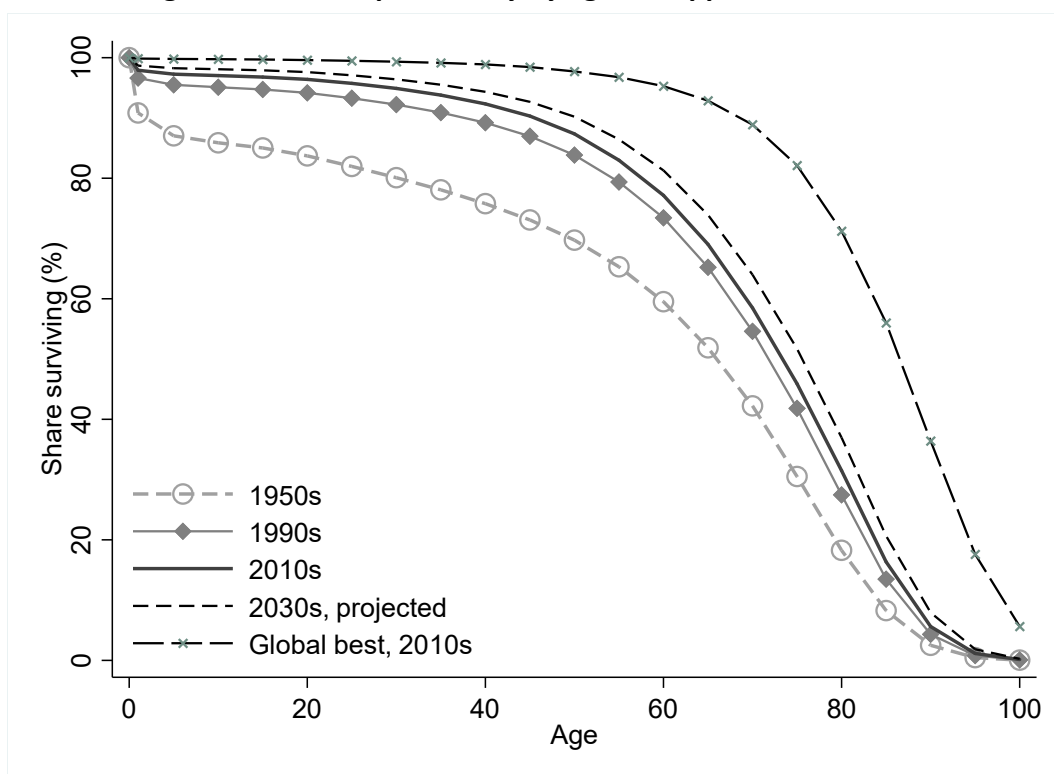
Note: Authors' calculation based on life tables from United Nations (2017).

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Within the Philippines, disparities in access to healthcare services and differing socio-economic circumstances have contributed to inequities in health as observed across income groups and between sexes, as well as among geographic regions (Banaag, et. al. 2019). The population of the country's southernmost and archipelagic province of Tawi-Tawi, for example, has a life expectancy at birth of only 54 years (Philippine Statistics Authority [PSA], 2016a), similar to many developing African countries, such as Chad, Nigeria and Sierra Leone. In contrast, the populations of the country's northern provinces of Ilocos Norte, Benguet, La Union, Cagayan, and Isabela all enjoy life expectancies at birth of at least 75 years, comparable with many of the Philippines' more affluent regional peers.

Over the last twenty-five years, the pattern of diseases in the Philippines has been slowly shifting towards greater incidence of non-communicable diseases, although communicable diseases and physical injuries remain prominent among certain age groups. Figure 2 shows the age profile of mortality by cause of death based on estimates from the 2017 Global Burden of Disease Study (GBD Collaborative Network, 2018).

Between 1990 and 2015, communicable diseases continue to be the most important cause of death among children aged five years old and below (Figure 2, Panels C and D), although its rate per population has more than halved over the same period (Figure 2, Panels A and B). As children transition into adolescence, non-communicable diseases and physical injuries increasingly become more important causes of death as the overall hazard of dying decline. Around the early teen years, mortality rates start to increase as deaths from physical injuries and non-communicable diseases begin to diverge. By age 30, a third of all deaths are from non-communicable diseases, and will continue to dominate over injuries, and communicable diseases as principal cause of death in succeeding age groups.

Figure 3 plots the population-wide mortality rates by more specific causes in 1990 and 2015. While the mortality rate from respiratory infections and tuberculosis has declined by about a third over the twenty-five year-period, that from cardiovascular diseases has increased by about 70 percent. Cardiovascular diseases have overtaken respiratory infections and tuberculosis as the leading cause of death among the Filipino population. Other non-communicable diseases, such as neoplasms, and diabetes and kidney diseases, are also on the uptrend with mortality rates of 75 and 58 deaths per 100,000 population, respectively, in 2015 from only 48 and 18 in 1990. Mortality rates from maternal and neonatal disorders has been halved over the same period, but remains as one of the leading causes of death in the country.

What drives these patterns of mortality in the Filipino population?

In the last twenty-five years, the country has successfully reduced mortality rates from child and maternal malnutrition (Figure 4). Estimates from the 2017 GBD Study (GBD Collaborative Network, 2018) show that for every 100,000 population 133 died of child and maternal malnutrition, including from suboptimal breastfeeding, child growth failure, low birth weight and short gestation, and micronutrient deficiency, in 1990. This rate has since declined by more than two-thirds to 43 deaths per 100,000 population by 2015.

Figure 2. Cause of death by age: Philippines, 1990 and 2015

A. Deaths per 100 population, 1990
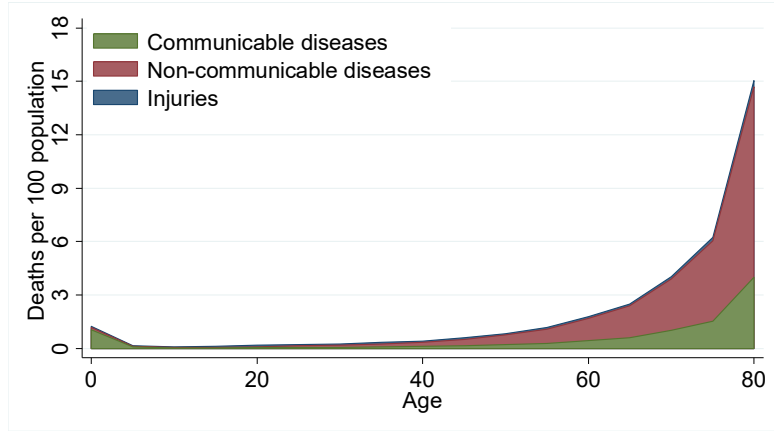
B. Deaths per 100 population, 2015
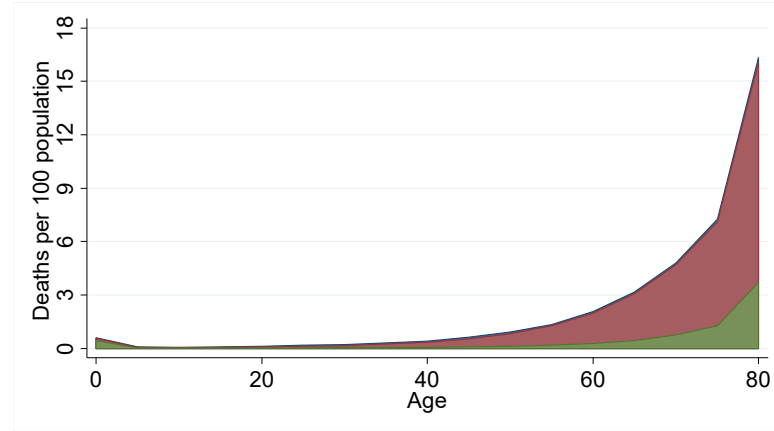
C. Share of all deaths (%), 1990
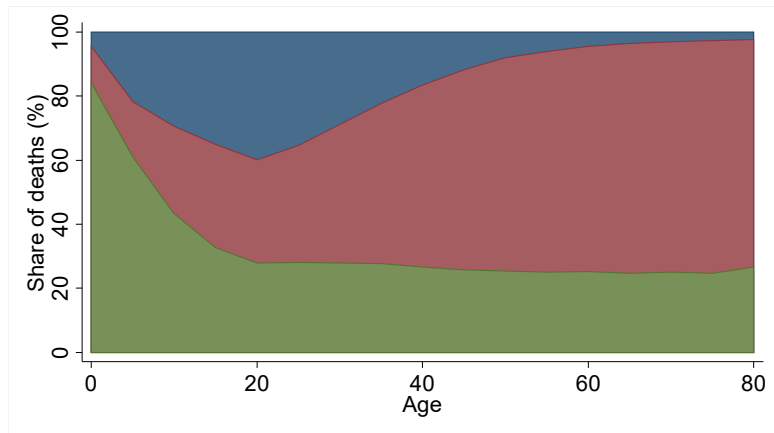
D. Share of all deaths (%), 2015
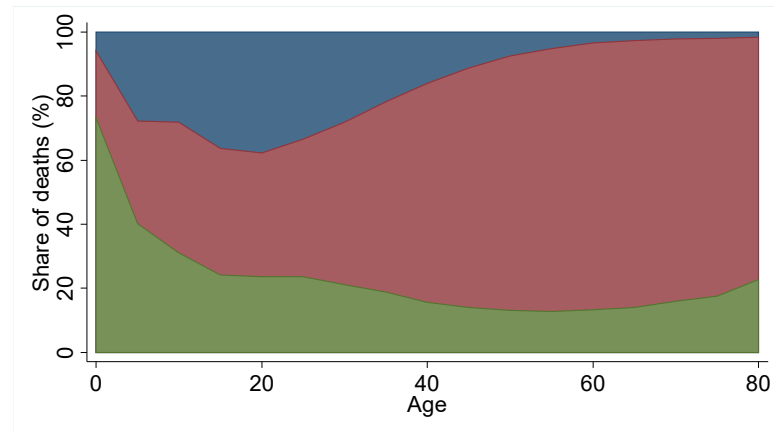
Note: Deaths from communicable diseases include those from maternal and neonatal disorders and nutritional deficiencies. Base data are from the GBD 2017 Study by the GBD Collaborative Network (2018).

Figure 3. Deaths per 100,000 population by cause: Philippines, 1990-2015

△ Cardiovascular diseases
○ Respiratory infections and tuberculosis
△ Neoplasms
△ Diabetes and kidney diseases
✕ Maternal and neonatal disorders
△ Chronic respiratory diseases
□ Unintentional injuries
△ Digestive diseases
○ Other infectious diseases
□ Self-harm and interpersonal violence
○ Enteric infections
△ Other non-communicable diseases
△ Neurological disorders
✕ Nutritional deficiencies
□ Transport injuries
○ HIV/AIDS and sexually transmitted infections
○ Neglected tropical diseases and malaria
△ Substance use disorders
△ Skin and subcutaneous diseases
△ Musculoskeletal disorders
△ Mental disorders

0   50   100   150   200
Deaths per 100,000 population

○ Communicable Diseases   △ Non-communicable Diseases

□ Injuries   ✕ Maternal and Neonatal Disorders, and Nutritional Deficiencies

Note: The tip of the arrowhead corresponds to mortality rate estimate for 2015, while the base of the shaft for 1990. Base data are from the 2017 GBD Study (GBD Collaborative Network, 2018).

Figure 4. Deaths per 100,000 population by risk factor: Philippines, 1990-2015
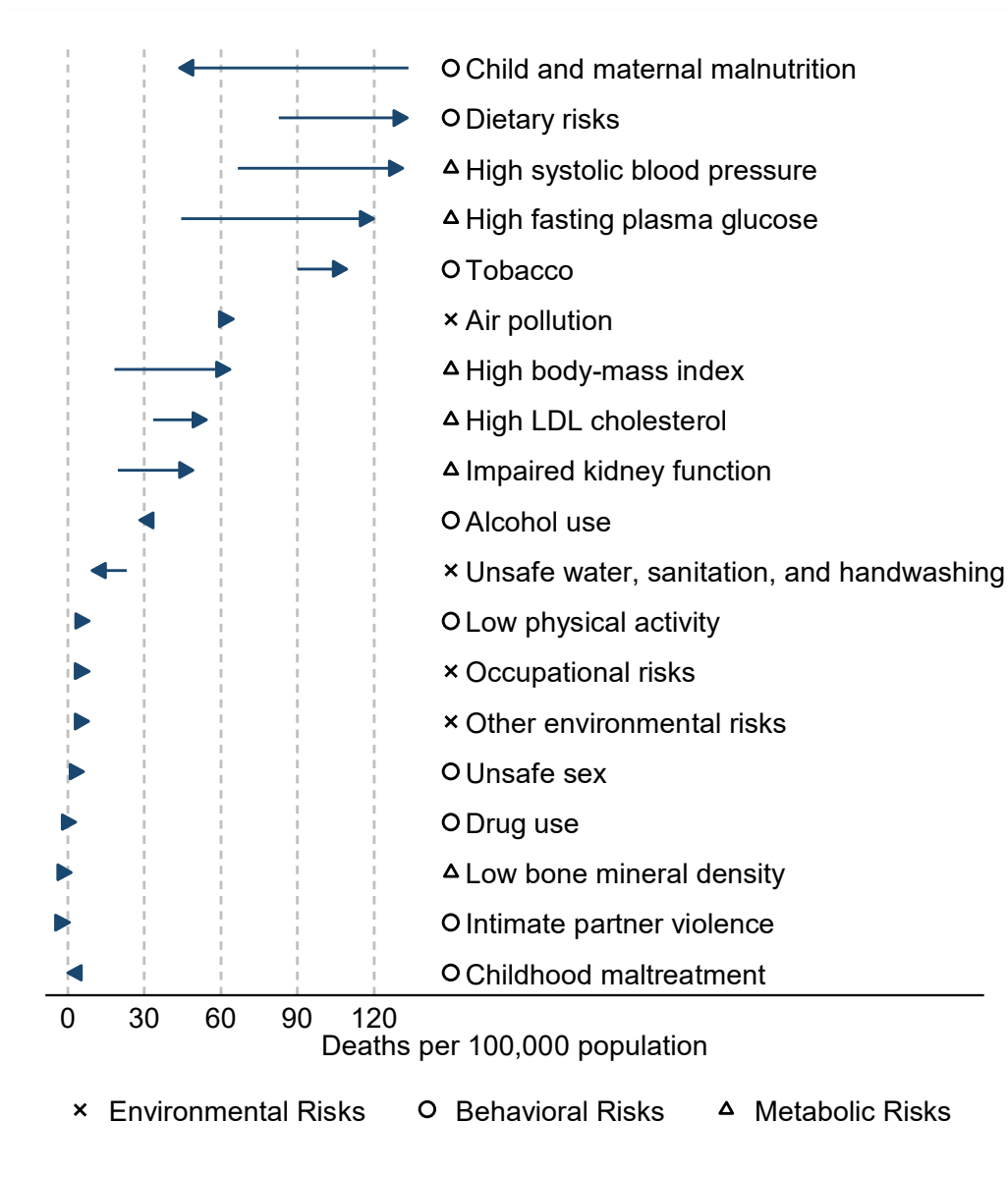
Note: The tip of the arrowhead corresponds to mortality rate estimate for 2015, while the base of the shaft for 1990. Base data are from the 2017 GBD Study (GBD Collaborative Network, 2018).

In its stead, mortality from diet-related behavioral risks, including low consumption of fruit and vegetables, and high consumption of sugary, salty and fatty food, has increased from 82 deaths per 100,000 population in 1992 to 132 in 2015. Metabolic risks, including high systolic blood pressure, high fasting plasma glucose high-body mass index, high LDL cholesterol, and impaired kidney function, are also important contributors of death that together has claimed 418 lives per 100,000 population in 2015, more than twice its rate of 182 deaths per 100,000 population in 1990. Other behavioral risks, such as tobacco- and alcohol-use, and environmental risks, including air pollution, have also contributed to the burden of premature deaths in the country.[2]

3.   Healthcare consumption over the lifecycle

The lifecycle pattern of morbidity and mortality in the last twenty-five years closely mirrors the evolution of the age profile of expenditures in healthcare. Figure 5 plots per capita health consumption by age and source between 1990 and 2015 based on National Transfer Account (NTA) estimates for the Philippines (Abrigo, et. al., forthcoming). These profiles capture the age pattern of diseases, as well as related treatment costs and other factors affecting access to healthcare among the population in a particular year. Throughout the past twenty-five years, similar to the pattern of mortality presented in the previous section, per capita health consumption starts relatively high at birth, dips as infants mature into childhood then adolescence, eventually increases into adulthood, particularly for maternal care, and further inches upward towards the end years of the lifecycle.

The average health consumption per person has increased considerably in the recent past. In 1995, an average person is expected to consume about PhP1,501-worth of healthcare goods and services (in 2015 prices). This increased by only about 25 percent into 2005, with per capita health consumption at PhP1,894. But between 2005 and 2015 per capita health consumption has more than doubled to PhP4,143. These patterns of increasing healthcare consumption are more pronounced when disaggregated by age group.

Between 1995 and 2015, per capita health consumption among those aged 24 years and below increased from PhP982 to PhP2,398. Among prime-age adults aged 25 to 64 years, health spending per person has increased from PhP2,216 in 1995 to PhP5,471 in 2015. The largest increase, however, may be observed among the elderly aged 65 years and older, wherein their per capita health consumption grew from PhP3,100 in 1995 to PhP12,121 to 2015. In all these age groups, much of the increase occurred over the last decade, wherein per capita health consumption increased by more than 7 percent annually on average. An exception is among the elderly, whose health consumption per capita has been growing on average by more than 7 percent annually since 1995.

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[2] See GBD Risk Factor Collaborators (2018) for a discussion of the GBD 2017 comparative risk assessment methodology, and summary of global and regional results.

Figure 5. Healthcare expenditure by age: Philippines, 1990-2015
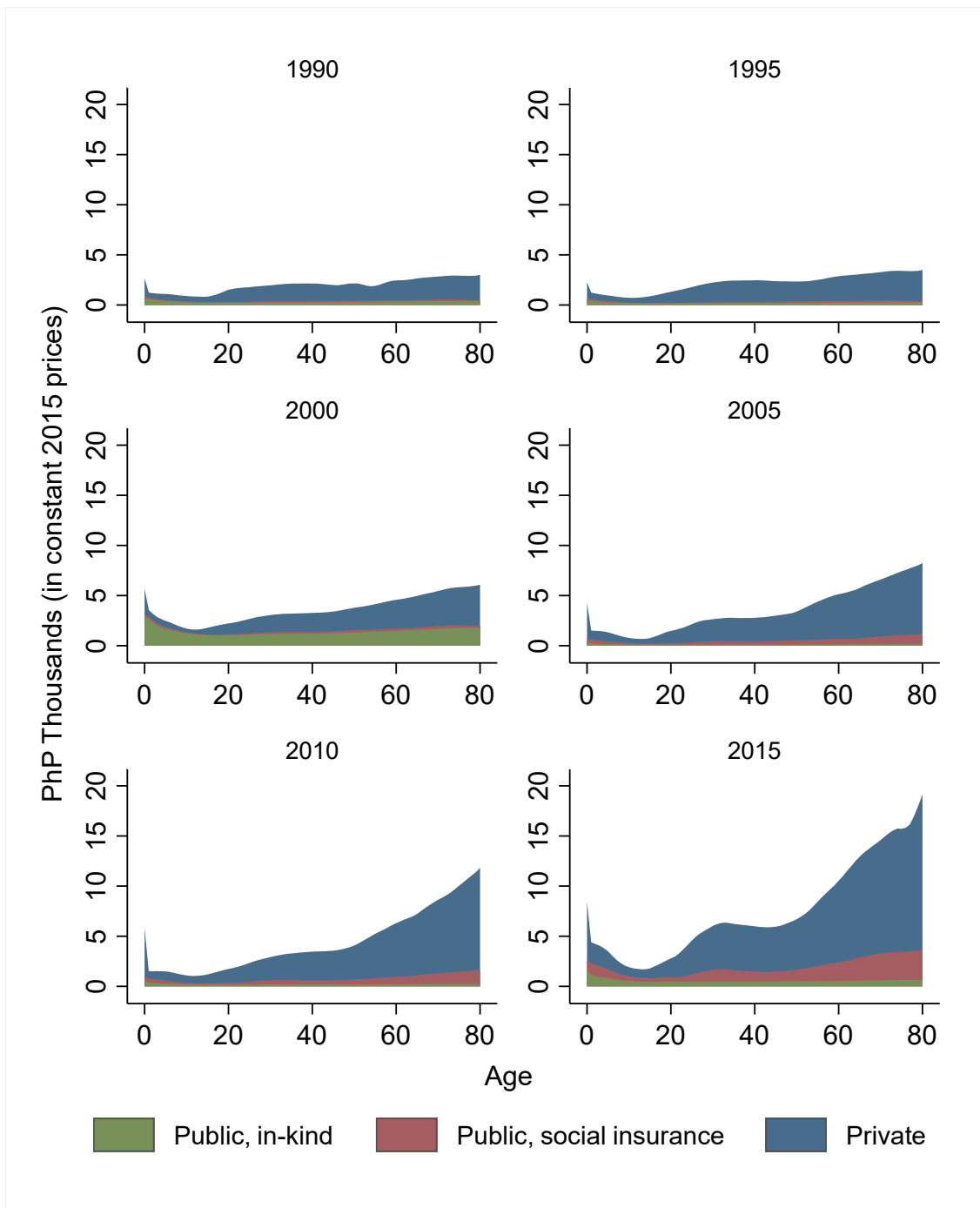
Source: Abrigo, et. al. 2018

This recorded growth in health spending per person may be attributed in part to the growing population burden of non-communicable diseases, which are chronic in nature. Because of its long duration and generally slow progression, those afflicted are expected to spend more on healthcare over the course of the disease.

Another important source of the increase, however, is from government-initiatited programs, including government in-kind provision of healthcare services and those paid through the country's social health insurance (SHI) system. With the reorganization of the country's SHI system from the separate medical care (Medicare) programs under the government-mandated pension fund systems in 1997 to what is now the Philippine Health Insurance Corporation (PHIC), various programs have been initiated to expand the system's coverage. With PHIC's creation, a sponsorship program was mandated, similar to the original Medicare program, to provide SHI coverage to individuals from low-income households. This program was eventually financed through national tax levies on tobacco and alcoholic beverages. In addition, starting in 2014, senior citizens aged 60 years and over are automatically covered under the SHI system. More recently, in 2019, all Filipinos are considered SHI members under the Universal Health Care Act.

Despite these public sector innovations, at least until 2015, the share of the private sector in all healthcare spending, including household out-of-pocket expense and private health insurance, remains substantial at about 60 percent. Over the course of two decades, between 1990 and 2010, aggregate government-mediated healthcare spending more than doubled from PhP21 billion to PhP52 billion. The amountof public spending for healthcare grew further with the expansion of the SHI program. In 2015, the government spent a total of PhP156 billion for healthcare, or about threefold of what it had spent in 2010. Private spending, however, has been growing faster. Over the same period, aggregate private health consumption increased from PhP52 billion in 1990 to PhP164 billion in 2010, and further growing to PhP263 billion in 2015, overshadowing aggregate public spending in each year.

This growth in private healthcare spending appears to be positively correlated with growing household incomes. While per capita labor income among prime-age adults aged 25 to 64 years has stagnated during the 1990s, the rebound the country has been experiencing since the late 2000s has contributed greatly to household purchasing power, which allowed greater consumption, including of healthcare, among the general population. Between 2000 and 2010, per capita labor income among prime-age adults increased by 2.8 percent annually on average. Over the next half decade, per capita labor income among prime age adults surged faster, growing on average at about 5.1 percent annually.

The changing population age distribution also affects aggregate healthcare spending. In 1995, of the country's almost 70 million population, about 3 percent are aged 65 years or older. Fastforward to 2015, the country has breached the 100 million population mark wherein the elderly accounts for about 5 percent. With a growing elderly population whose average spending per person on healthcare is relatively higher than the rest of the population in the economy, aggregate health spending is expected to increase.

Table 1 provides a decomposition of the contribution of the growth in per capita spending and the shifts in population age distribution on aggregate health spending growth by applying a similar decompositon used in Abrigo, et. al. (2016). The aggregate growth decomposition allows us to isolate the accounting effect of the country's demographic transition, and the behavioral effects that result in greater healthcare spending per person. Between 1995 and 2015 aggregate healthcare consumption in the country increased on average by 7.2 percent annually. The growth is much faster in the more recent decade at 9.9 percent annually, or more than twice relative to the 4.5 percent annual growth registered between 1995 and 2005.

When the aggregate growth in healthcare spending are decomposed into its components, Panel C of Table 1 shows that the contribution of the growth in per capita spending and the overall demographic change between 1995 and 2005 are about the same, i.e., 2.4- against 2.1- percentage points annually in favor the growth in per capita spending. In more recent years, the growth in aggregate healthcare spending is fueled largely by growing per capita spending, which contributed 8.1 percentage points annually between 2005 and 2015, rather than demographic change, which slowed down to 1.4 percentage points additional annual growth over the same period.

If we further decompose the growth in aggregate healthcare spending by broad age groups, it becomes apparent that much of the recent increase are actually from the growth in per capita spending among prime-age adults. Between 2005 and 2015, the growth in their spending, particularly around the ages where investments on maternal healthcare are largely expended, contributed 4.1 percentage points to the average aggregate annual growth. That is about 40 percent of the overall growth during that period. This is followed by the growth in per capita spending among the young aged 24 years and younger, which contributed 2.7 percentage points annually to the aggregate healthcare spending growth between 2005 and 2015.

On the contribution of population change, the decomposition suggests that the contribution of the growth among prime-age population remains the same between 1995 and 2005, and between 2005 and 2015. The contribution of the growing elderly population, on the other hand, increased from 0.2- and 0.4- percentage points, respectively, over the same period. The drop in the contribution of demographic change comes from the slowing growth of the population aged 24 years and younger. That is, from 0.6- to 0.2-percentage points. This coincides with the decline in total fertility rate in the Philippines from about four to around three over the two-decade period. These opposing forces of the decelerating growth in the young population and the accelerating growth in the elderly population is expected to shape the future of healthcare spending in the country.

Compared with the rest of the world, the Philippines is relatively on the extreme side that rely quite substantially on private spending to finance healthcare. Figure 6 plots the share of healthcare spending borne by different financing agents based on data from National Health Account (NHA) estimates of more than 160 countries and territories around the world in 2015 (World Health Organization [WHO], 2018). On the ternary, the share of SHI in overall

Table 1. Growth decomposition of aggregate health expenditures, 1995-2015

	Per capita health expenditures (constant 2015 PhP)				Population (millions)				Aggregate health expenditures (constant 2015 PhP billions)			
	0-24	25-64	65+	All ages	0-24	25-64	65+	All ages	0-24	25-64	65+	All ages
A. Levels (as indicated)												
1995	982	2,216	3,100	1,501	41.6	26.0	1.9	69.6	40.9	57.7	5.9	104.5
2005	1,103	2,716	5,916	1,894	49.1	34.2	2.7	85.9	54.1	92.9	15.7	162.7
2015	2,398	5,471	12,121	4,143	52.6	44.5	4.1	101.2	126.1	243.3	49.7	419.1
B. Annual growth (%)												
1995 - 2005	1.2	2.1	6.7	2.4	1.7	2.8	3.4	2.1	2.8	4.9	10.3	4.5
2005 - 2015	8.1	7.3	7.4	8.1	0.7	2.7	4.5	1.6	8.8	10.1	12.2	9.9
1995 - 2015	4.6	4.6	7.1	5.2	1.2	2.7	3.9	1.9	5.8	7.5	11.3	7.2
C. Contribution to aggregate growth (% points)												
1995 - 2005	0.5	1.1	0.4	2.4	0.6	1.5	0.2	2.1	1.1	2.7	0.6	4.5
2005 - 2015	2.7	4.1	0.7	8.1	0.2	1.5	0.4	1.6	2.9	5.8	1.2	9.9
1995 - 2015	1.8	2.6	0.4	5.2	0.5	1.5	0.2	1.9	2.3	4.1	0.6	7.2

Note: Population estimates are from the 2017 United Nations World Population Prospects (UN, 2017). Health expenditure estimates are from the Philippine National Transfer Account estimates by Abrigo, et. al. (forthcoming). Panel C does not include interaction effects, and therefore individual effects may not add up to total.

healthcare spending increases as one moves from left to right. Government in-kind transfers, e.g. government-provided services in public healthcare facilities, etc., become more prominent source with the movement from the lower right extreme to the apex of the ternary. Finally, private spending grows as a share of total healthcare spending as one advances from the apex to the lower left-side of the plot.

In 2015, about two-thirds of healthcare spending in the Philippines are paid by households and other private institutions based on NHA estimates. This figure is slightly higher compared to estimates using NTA.[3] The share paid by household and other private institutions in the country is somewhat higher compared to those in other economies of the same development level. Among lower middle-income countries in 2015, the quartiles of private share in overall healthcare spending are 35-, 53-, and 66-percent, respectively. Government in-kind healthcare spending and social health insurance schemes together comprises a third of all healthcare expenditures in the Philippines in 2015, contributing 13- and 20-percent respectively.

Figure 6. Healthcare financing around the world: 2015
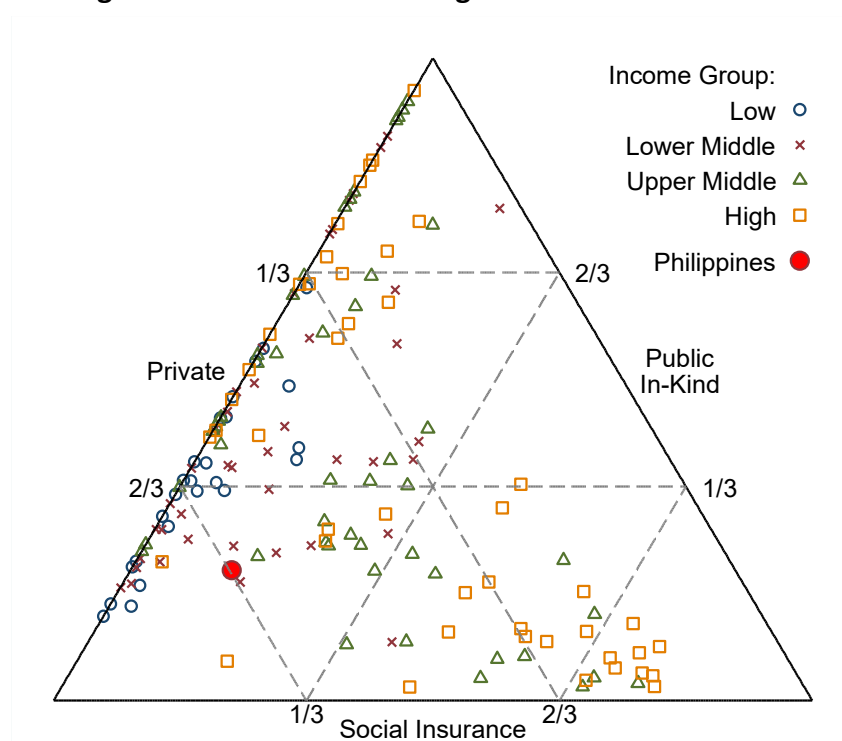
Note: Authors' calculation using National Health Account estimates from the Global Health Expenditure Database (WHO, 2018).

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[3] It is important to note though that NHA and NTA have different coverage, such as the inclusion of occupational health and overseas healthcare consumption in NHA. Values in NTA are pre-taxes, unlike in NHA. See OECD, et. al. (2011) for a description of the NHA methodology. See United Nations (2013) for a description of the NTA methodology, and Abrigo, et. al. (forthcoming) for its recent application in the Philippines.

While the Philippines' healthcare spending is largely financed by the private sector, it is quite interesting to note that in this particular cross-section the share of private spending in aggregate health care tend to decline as economies develop, validating the health financing transition hypothesis (c.f. Peacock and Wiseman, 1961; Fan and Savedoff, 2014). From the ternary presented in Figure 6, low income countries have very small share of healthcare spending financed through social health insurance schemes, and are, instead, financed largely through out-of-pocket and other private schemes. Higher income countries tend to have higher shares of public in-kind healthcare spending and/or social health insurance schemes.

In 2015, the average share of the private sector in overall healthcare spending for low-, lower middle-, upper middle-, and high-income countries are 63-, 50-, 39-, and 33-percent, respectively. The share of social health insurance, on the other hand, are respectively 2-, 8-, 20-, and 31-percent. In this regard, the Philippines appears to be similar to an average low-income country with regard to the share of private sector in healthcare financing, and to an average low middle-income country on the split between public in-kind and social health insurance spending.

As we have shown using Philippine NTA data, the distribution of healthcare financing in the country has evolved across the years. This observation is also apparent using global NHA data. Figure 7 shows the direction of change in healthcare financing in the Philippines and in other countries around the world between 2000 and 2015. Panel A shows that over the fifteen-year period the Philippines' healthcare financing has become more private sector-financed, similar to Viet Nam although to a much lesser degree. The rest of our regional peers, on the other hand, have moved toward more government-mediated schemes: greater public in-kind provision for Brunei, Cambodia, Lao PDR, Malaysia, Myanmar, Singapore, and Thailand, while more social health insurance for Indonesia, China, South Korea, and Japan.

But when we consider the rest of the world, the Philippines and Viet Nam are not alone in this trend of rising private share in healthcare spending. Many more developed countries that had previously relied more heavily on government-mediated schemes, including the Netherlands and Colombia, have recently depended on greater shares of private financing (Figure 7, Panel C). This may be an indication of a reversal in the health financing transition.

More generally, when the experiences of different countries between 2000 and 2015 are considered, there appears to be no obvious, or, at best, weak pattern in the direction of the relative shares of different funding schemes in aggregate healthcare spending as economies develop. Clearly there are developing countries that have transitioned to greater public in-kind provision of healthcare (Figure 7, Panel D) or to expanding the share of SHI schemes (Figure 7, Panel B). But there are others, like Viet Nam and the Philippines, that have relied more heavily on household's capacity to pay and other private schemes. And there are advanced economies that have reverted to greater roles for private sector financing (Figure 7, Panel C).

Figure 7. Healthcare financing around the world: 2000-2015

A. ASEAN+3 Countries

B. Towards more social health insurance
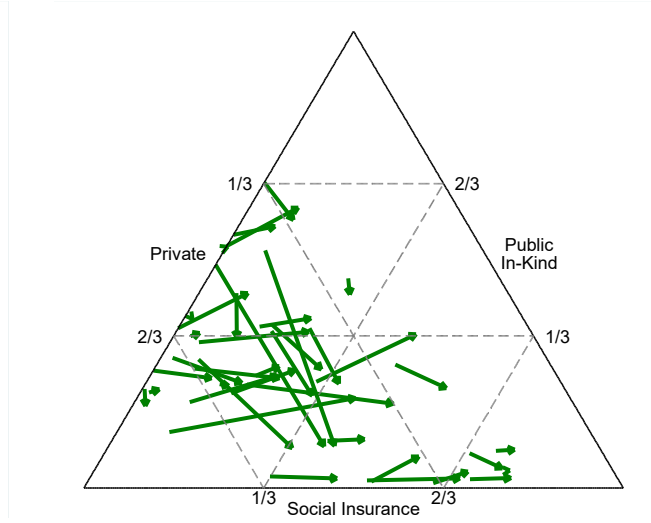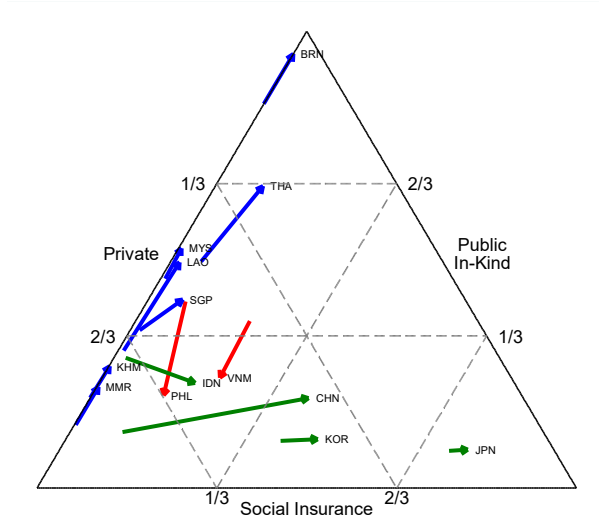
C. Towards more private financing

D. Towards more public in-kind provision
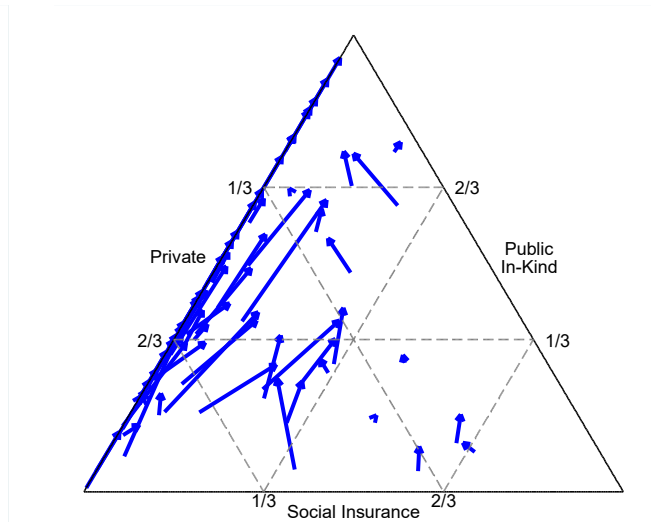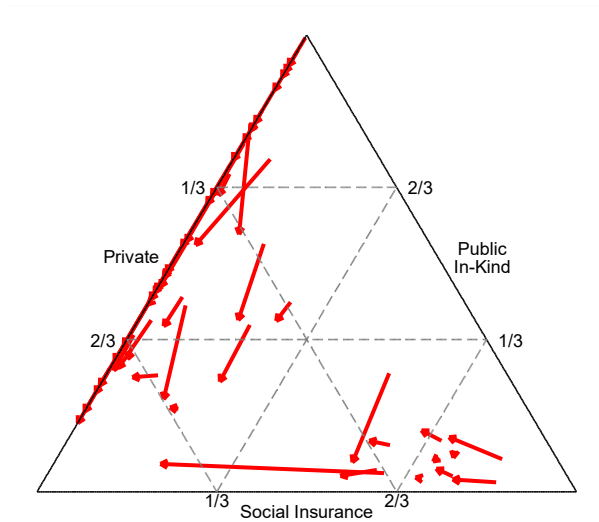
Note: ASEAN+3 Countries include Brunei Darussalam (BRN), Cambodia (KHM), Indonesia (IDN), Lao PDR (LAO), Malaysia (MYS), Myanmar (MMR), Philippines (PHL), Singapore (SGP), Thailand (THA), Viet Nam (VNM), China (CHN), South Korea (KOR), and Japan (JPN). Source of basic data: WHO (2018), National Health Accounts.

4.   Universal healthcare in the Philippines

But this trend of greater private sector role in healthcare financing in the Philippines is expected to change under the Universal Health Care (UHC) Act. In 2019, the Philippine government enacted Republic Act 11223 that guarantees "equitable access to quality and affordable healthcare." Under the UHC Act, all Filipino citizens are automatically covered under the National Health Insurance Program (NHIP). Premium contributions of direct contributors[4] are paid to the NHIP in proportion to the paying member's income,[5] while subsidies for indirect contributors are funded by the national government through its general appropriations. All Filipinos are required by law to register with a primary care provider who will act as the navigator and coordinator of health care for each individual.

The Universal Health Care Act mandates the integration of local health systems into province- or city-wide health systems. The delivery of government-mediated healthcare services will be coursed through these integrated health systems. Population-based services, i.e., those that have population groups as recipients, are financed through the Department of Health and provided at no cost to beneficiaries at point of service. Individual-based services, i.e., those interventions that do "not alter the underlying cause of illness" and can be traced to an individual recipient, on the other hand, are wholly or partially financed by the NHIP.

RA 11223 contains other provisions that are expected to improve the delivery of healthcare services. In Chapter VI of the law, on human resources for health (HRH), for example, recipients of government-funded scholarship programs in the allied and health-related courses are required to provide return service for at least three years under the public sector in identified priority areas. This provision has the potential to ensure the continuous supply of HRH in the countryside, and alleviate the highly urban-centric spatial distribution of healthcare workers in the country (c.f. Dayrit, et. al., 2018). In addition, the law institutionalizes health technology assessment to provide a fair and transparent priority setting mechanism in developing policies, programs, and regulations under the UHC Act.

The immediate beneficiaries of RA 11223 are likely to be those populations from more disadvantaged socio-economic backgrounds. Based on estimates from the 2017 National Demographic and Health Survey (PSA and ICF, 2018), for example, while 93.8 percent of pregnant women had antenatal care from a skilled health professional, only 86.4 percent of those from the poorest quintile of households had antenatal care. Access to basic healthcare services especially among poorer households remains to be an important concern as may be observed using other proximate measures: deliveries by skilled provider, immunization among children, and health-seeking behavior among suspected TB patients (see Table 2, Panel A).

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[4] Direct contributors are "those who have the capacity to pay premiums, are gainfully employed and are bound by an employer-employee relationship, or are self-earning, professional practitioners, migrant workers, including their qualified dependents, and lifetime members" (RA 11223, Section 4(f)). Indirect contributors, on the other hand, are "those not included as direct contributors, as well as their qualified dependents…" (Section 4(o)).

[5] In addition to premium contributions by members, the NHIP are also funded through special provisions in other laws, including from incremental tax collections from tobacco products and alcoholic beverages, the national government's share in the Philippine Amusement Gaming Corporation's income, and mandated contributions from the Philippine Charity Sweepstakes Office, among others.

Socio-economically disadvantaged households are also less likely to be covered by any health insurance; and are more prone to not seek treatment because of perceived costs or to suffer from catastrophic health spending (Table 2, Panel B). In 2017, only 59.0 percent of individuals in the poorest household quintile in the NDHS reported that they are covered by NHIP, compared with 79.2 percent of individuals in the richest household quintile. Only 2.3 percent of the population have private insurance coverage, and very rarely among lower socio-economic groups. This lack of insurance protection may have contributed to a greater share among the poorest to not seek treatment, particularly among those with tuberculosis (TB) symptoms, or to suffer significant financial loss from catastrophic health care expenditures.

It is important to emphasize though that while the poorest are greatly disadvantaged in terms of access to healthcare and financial risk protection coverage, households in better socio-economic backgrounds may not necessarily be universally covered. Among the richest in 2017, for instance, only 44.4 percent of children aged 24-35 months have complete age-appropriate vaccinations. Only 83.2 percent of the population in the richest quintile of households have health insurance coverage. And around 4.0 percent of those households experienced more than 40 percent loss in non-subsistence income, i.e., net income after removing household expenditures for food, water and housing, because of out-of-pocket healthcare expense.

Because the UHC Act are funded through different mechanisms, including sin taxes, share of government incomes from public corporations, NHIP premium contributions, and other unobligated government incomes, the incidence burden of financing UHC depends on who contributes to each of these mechanisms. Among direct contributors, the burden is expected to be larger among richer households (Table 2, Panel C) based on household characteristics in the 2015 Family Income and Expenditure Survey (PSA, 2016b).

5.   Financing universal health care in an ageing Philippines

The adoption of the Universal Health Care Act came at an opportune time in the Philippines' demographic history. With the country's declining average fertility rate, albeit very slowly, over the last three decades, the Philippine population is increasingly being concentrated at prime working ages. In 2015, around 44 percent of the population are aged 25 to 64 years, compared to about 37 percent in 1990. This expanding workforce, in turn, has contributed to greater incomes per person, estimated at around 0.4-0.6 percentage points per year in the last decade (c.f. Abrigo, et. al., forthcoming, Mason, et. al., 2017).

**Table 2. Selected universal health care indicators: Philippines, 2017**

	All	By quintiles of household socio-economic status				
		Q1 (Lowest)	Q2	Q3	Q4	Q5 (Highest)
A. Access to basic health care services						
% of pregnant women with antenatal care from skilled health worker	93.8	86.4	94.9	95.8	97.4	97.5
% of pregnant women with deliveries by skilled provider	84.4	64.5	83.8	92.8	97.3	98.7
% of children 24-35 months old with all age-appropriate vaccinations	33.4	22.9	33.5	37.4	38.4	44.4
% of population with TB symptoms who sought treatment	45.8	40.3	44.5	47.0	51.4	55.3
B. Financial risk protection						
% of population with NHIP coverage	65.8	59.0	60.6	62.1	68.2	79.2
% of population with private insurance coverage	2.3	0.2	0.6	1.0	2.0	7.8
% of population with any health insurance coverage	68.3	59.7	62.2	65.0	71.7	83.2
% of population with TB symptoms who did not seek treatment because of cost	10.9	18.3	10.6	5.9	5.1	1.7
% of households with catastrophic health spending	6.7	13.0	6.7	5.3	4.7	4.0
C. Population						
% of total population	100.0	25.0	21.1	19.5	18.2	16.2
% of population who are potential contributing members (excluding dependents)	24.2	0.0	20.6	33.3	36.5	41.2
% of population who are potential contributing members (including dependents)	60.6	0.0	60.5	90.4	88.6	86.8

Note: Except for catastrophic health spending and population measures, all indicators are from the 2017 National Demographic and Health Survey (PSA, 2018). Catastrophic health spending is defined here as having health expenditures greater than 40 percent of the total household income after netting out expenditures attributed to food, housing and water. Catastrophic health spending is calculated from the 2015 Family Income and Expenditure Survey (PSA, 2016b). Private insurance include insurance coverage from private health insurance and pre-need companies, and health maintenance organizations. Population distribution in Panel C are based on the matched 2015 FIES and 2015Q4 Labor Force Survey (PSA, 2016b, 2016c). Potential contributing members are proxied as those who are (i) employed (ii) adults aged between 21 and 59 years, who are identified as (iii) non-poor based on the 2015 national poverty threshold. Universal health coverage indicators based on the 2017 NDHS are disaggregated by quintiles of asset holdings, while that based on the 2015 FIES uses quintiles of per capita household income.

But this favorable demographic trend will soon reverse. Figure 8 presents the Philippines' population age pyramid in 2015, and projections for 2050. In 2015, about four million of the country's population are aged 65 years and over. This figure is projected to double to eight million by 2030, and will surpass the ten million-mark by 2035. The elderly will then comprise more than 7 percent of the population, making the country an ageing society. By 2050, the Philippines is projected to have almost 15 million elderly population (United Nations, 2017). This increasing share of the elderly, together with declining fertility, is expected to depress per capita income in the Philippines starting in 2045 if this population accounting effect is not countered by rising productivity from capital deepening – through greater human capital and other investments – during the demographic transition (c.f. Mason, et. al., 2017).

Population ageing poses a challenge to the fiscal sustainability of the government's UHC program. With the increasing share of the elderly, government expenditures on health care are expected to increase unless health care costs per person, especially among the elderly, decreases in the future. This, however, may be unlikely if we consider the historical trend in health care spending per person in the last twenty-five years presented in the previous section. Further, the mandates of UHC entail greater government roles in health spending in the country.

Figure 8. Population distribution: Philippines, 2015 and 2050
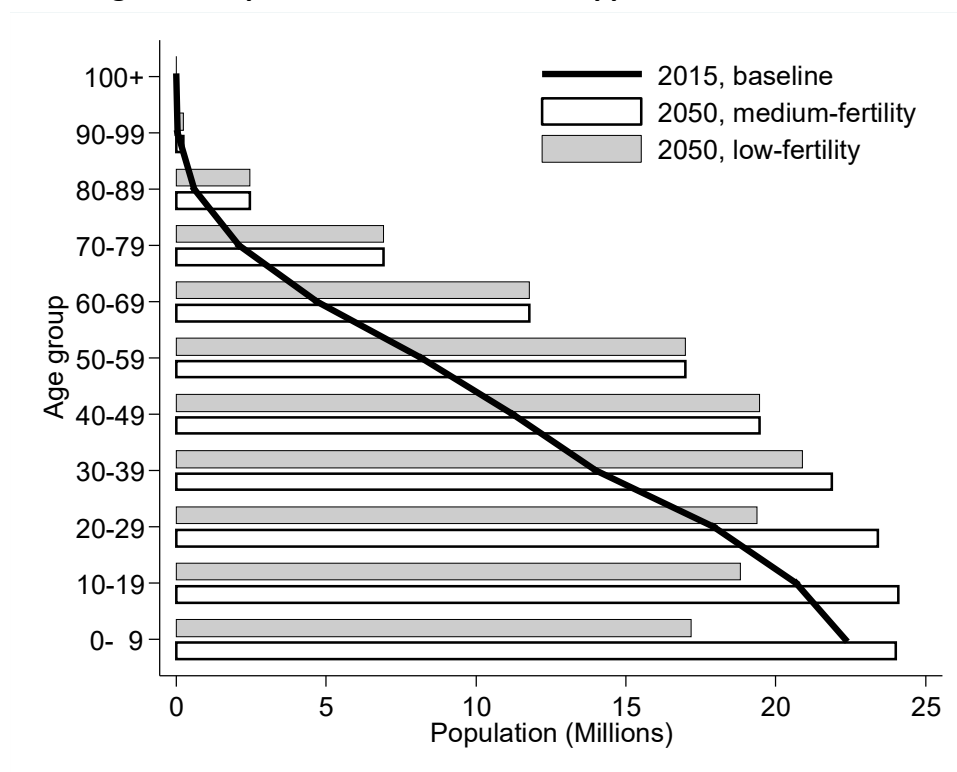
Source: United Nations (2017).

Figure 9 presents alternative per capita age profiles of government health care spending based on ideation from these UHC Act mandates. The shaded region is the combined public and private per capita health consumption by age in 2015 based on NTA estimates for that year. The solid line is the combined per capita public in-kind provision and social health insurance spending for that year.

Figure 9. Alternative per capita government health expenditure by age
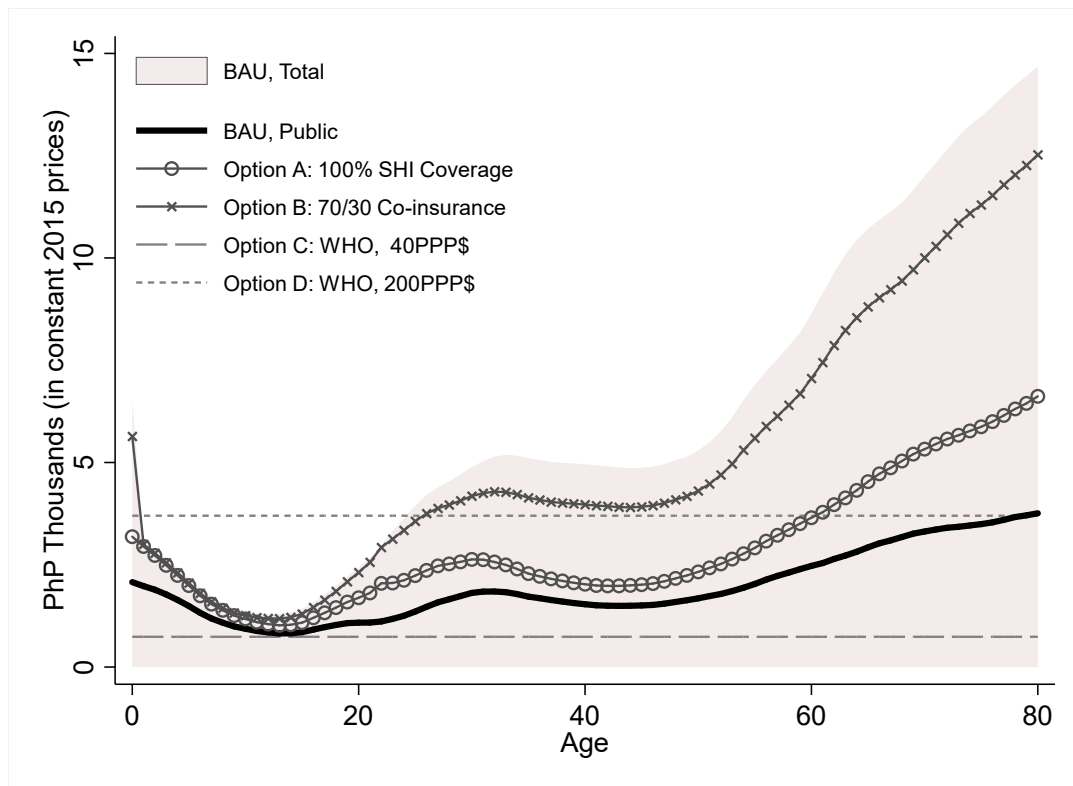
Note: Authors' calculations based on data from Abrigo, et. al. (forthcoming). BAU (business-as-usual) refers to the age profile of per capita health care consumption observed in 2015.

As discussed in the previous section, a key mandate of the UHC Act is the universal inclusion of all Filipinos in the SHI system (see Chapter II, RA 11223). Suppose disease burden, SHI-covered diseases and related capitation, health-seeking behavior and other factors that affect SHI utilization remains the same. Raising SHI enrollment to 100 percent implies that per capita government health consumption is expected to increase across age groups as presented as Option A in Figure 9. This is a direct consequence of having more people covered by SHI with the presumption that the additional members have the same epidemiological profile as those already covered under the country's SHI system. Based on SHI coverage rates from the 2017 NDHS and the population in 2015, this translates to about 35 million additional SHI members.

The UHC Act also mandates the regulation of co-payments and co-insurance, particularly in public hospitals (Chapter III), and standards for the same among health care provider networks (Chapter IV). Suppose on top of the 100-percent SHI enrollment the NHIP also covers 70

percent of the combined private health consumption and SHI spending, while keeping other variables the same. This 70/30 co-insurance rate follows the average share of out-of-pocket expenditures in total healthcare spending for 189 countries based on recent estimates by WHO and the World Bank (2015). Option B in Figure 9 presents the expected age profile of per capita health care spending based on this alternative government health care spending schedule.

As a reference, we also plot the PhP-equivalent of the PPP$40 (Option C) and PPP$200 (Option D) per capita government health care spending thresholds identified by Jowett, et. al. (2016). Based on several health care coverage indicators in 83 low- and middle-income countries, Jowett, et. al. (2016) found that UHC performance improves with greater government health care spending, with performance across countries starting to converge once the PPP$40-threshold is breached. Further, they found that significant improvement in UHC is achieved among countries where governments spend more than PPP$200 per person on health care.

These thresholds may be useful rules-of-thumb, although these may mask important differences in health care needs, and, therefore, spending patterns across different generations in the population as shown in Figure 9. Baseline estimates of average government health care spending by age in 2015 are sandwiched between these two thresholds. But alternatives Options A and B clearly show that government health care spending per person may breach the upper threshold for some age groups, particularly among the young and the elderly.

The population age distribution projections in Figure 8 and the alternative age schedules of per capita government health care spending in Figure 9 may be used as first-cut estimates of the potential aggregate fiscal burden of the UHC Act. The resulting projections may be overstated however given that the life expectancy of Filipinos is also expected to rise in the future. As noted by Fries (1980, 2005) and others (e.g. Fuchs, 1984; Zweifel, 1999), much of the burden of lifetime illness and health care spending are compressed towards the last few years of life.

Alternative age profiles of government health care spending per capita that corrects for increasing future longevity are presented in Figure 10. The age schedules are shifted to the right, starting from the trough past age 40 years, by the number of additional years of life expectancy at birth relative to that in 2015. Between 2015 and 2050, for example, life expectancy at birth among Filipinos are projected to increase by about five years (United Nations, 2017). The alternative age profiles are shifted to the right by the same amount to account for increasing longevity.

Table 3 presents projections of the financing requirements for the UHC Act using alternative age schedules of government per capita health spending, and population projection scenarios. For reference, we also include projections using observed age profile of government per capita health care spending in 2015, i.e., business-as-usual (BAU) scenario. In these projections, government health care spending per person are assumed to remain the same (Panel A) or partially shift to the right with increasing longevity (Pane B). The epidemiologic profile, technology, and other factors that may affect health-seeking behavior are assumed to remain the same throughout the projection horizon. Except those in Panel B, only population age distribution are changed in these projections.

Figure 10. Alternative per capita government health expenditure by age with longevity correction
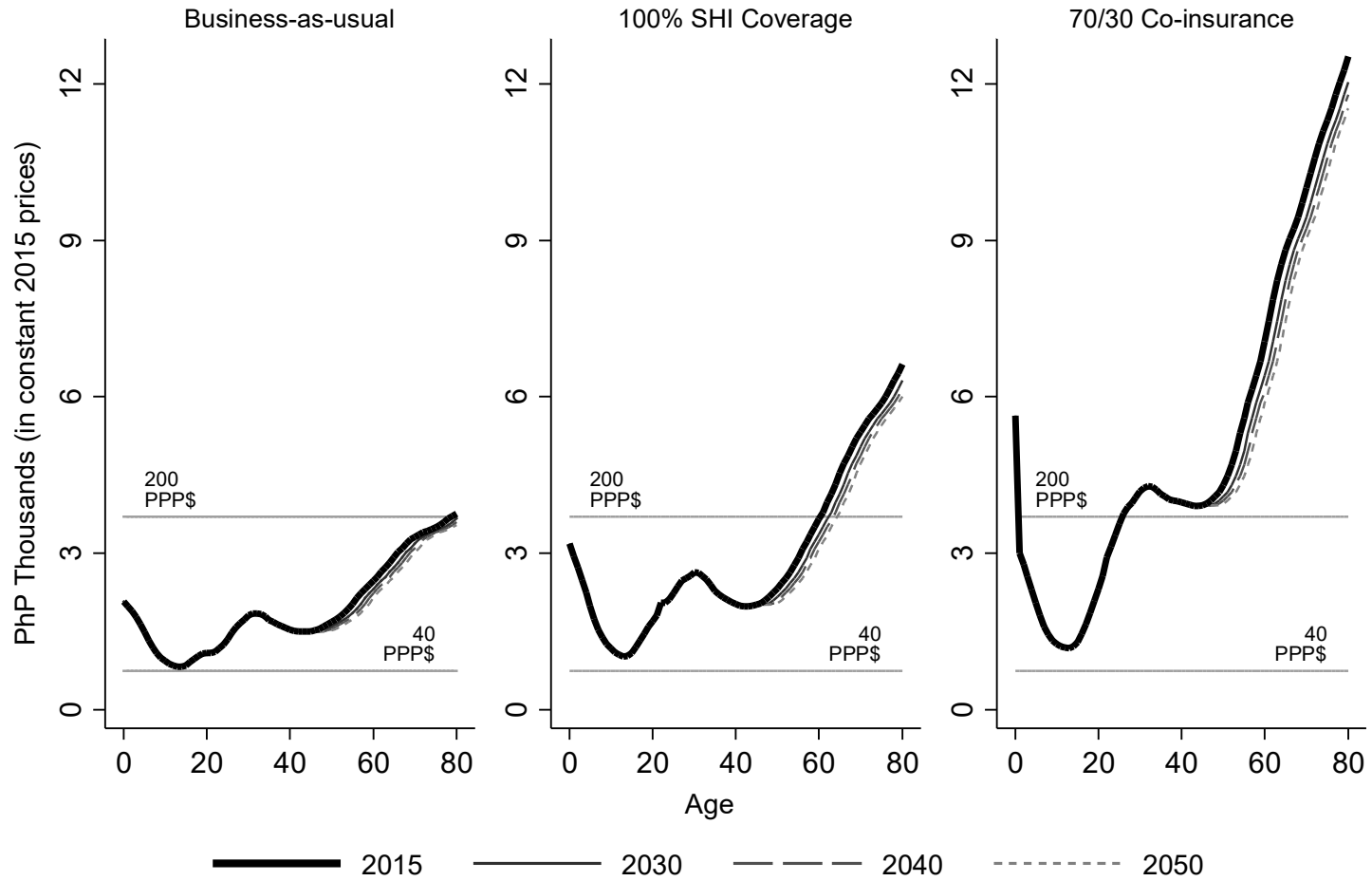
Table 3. Projected public expenditure requirement for UHC (in 2015 PhP Billion)

	Medium-Fertility Scenario				Low-Fertility Scenario			
	2020 (1)	2030 (2)	2040 (3)	2050 (4)	2020 (5)	2030 (6)	2040 (7)	2050 (8)
A. Age profiles fixed at baseline								
Business-as-usual	173	204	233	260	171	196	220	238
Option A: 100% SHI Coverage	251	296	340	383	248	286	322	350
Option B: 70/30 Co-insurance	401	482	564	644	397	470	542	602
Option C: PPP$ 40 per capita	81	93	103	112	80	89	96	99
Option D: PPP$200 per capita	406	464	516	560	402	445	478	496
B. Age profiles with longevity correction								
Business-as-usual	172	200	226	249	170	193	213	227
Option A: 100% SHI Coverage	248	289	327	361	245	278	308	329
Option B: 70/30 Co-insurance	395	469	539	604	391	457	517	561
Option C: PPP$ 40 per capita	81	93	103	112	80	89	96	99
Option D: PPP$200 per capita	406	464	516	560	402	445	478	496

Note: Authors' calculation. Figures exclude capital outlay.

Based on our stated assumptions, achieving 100-percent enrollment in SHI under the UHC Act si projected to require PhP245- to PhP251-billion (in 2015 prices) in government health care spending in 2020, compared with the BAU requirement of only PhP170- to PhP173-billion. These estimates only include the expected costs from increasing the population covered by the NHIP; and excludes any potential additional costs from previously uninsured population who were underserved and are more likely to avail of health services once insured, or from any imrrovements in health care services or SHI coverage limits. Raising the share of health costs covered by SHI to 70 percent is projected to require even greater spending on the part of government at around PhP391- to PhP407-billion for the same year. Except for the BAU estimates, all these figures are above the PhP257 billion projected requirement (ca. PhP225 billion in 2015 prices) for the same year by the Department of Health.[6]

A growing elderly population is expected to further increase the fiscal requirement to finance the UHC Act. This is true under the medium-fertility population projection scenario (Columns 1 to 4 in Table 3). By 2050, the UHC Act fiscal requirements under Options A and B are projected to increase to PhP361- and PhP604-billion, respectively, when longevity correction is applied (Panel B). These translate to about 1.3- to 1.4-percent annual increase in government health care spending to maintain the same level of services that the average Filipino received in 2015 for a growing and ageing population until 2050.

It may also be said under a low-fertility scenario, although to a much lesser degree (Columns 5 to 8, Table 3). Indeed, we project that the UHC government financing requirement to grow much slower to PhP329- and PhP561-billion under Options A and B, respectively, or at about 1.0- to 1.2-percent annually over the same thirty-year horizon. While the population is expected to transition faster into an ageing- and then an aged-society under this low-fertility scenario,

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[6] Based on reported interviews with DOH Secretary Francisco Duque. See, for instance, Cortez (2019)

those children who would have otherwise been born under the medium-fertility scenario will liberate resources amounting to about PhP10- to PhP12- billion in 2030 to around PhP33- to PhP43-billion in 2050, depending on the age profile of government health spending used.

In one way or another much of the UHC financing requirement is expected to be funded through tax levies on incomes, either directly as premium contributions of direct contributors to the NHIP, or indirectly – both by direct and indirect contributors – through other modalities, including general income taxation, excise taxes on tobacco or alcoholic beverages, or as part of the government's share in incomes of some government corporations.

As a though experiment, suppose the UHC program is wholly funded through payroll taxes. In Table 4, we present the implied tax rates needed to cover the projected UHC financing requirement. For simplicity, we focus on two UHC financing scenarios, namely, BAU and Option B, which provide two contrasting government health care financing regimes.

We also define two sets of labor income scenarios in order to demonstrate the potential implications of limiting the population of NHIP contributors at the extreme. We specify "broad labor income" as the aggregate labor income from all age and socio-economic groups, and all labor income types, including earnings of domestic employees, compensation of overseas workers, and labor share of household self-employment income. We also define a "narrow labor income" that refers to the aggregate labor income of non-poor local wage-workers aged 18 to 59 years. Aggregate labor income under these two scenarios are projected similarly as the UHC financing requirement, but using per capita labor income age profiles from Philippine NTA estimates (Abrigo, et. al., forthcoming). We assume that labor productivity grows conservatively at one percent per year, i.e., about half of the country's long-run historical average (c.f. Feenstra, et. al., 2015).

The projected implied payroll tax rates appear to suggest that population ageing need not increase the financing burden per person, at least over our projection horizon, when contributions are more inclusive, i.e., using broad labor income as base. This is true regardless of the government financing regime, i.e., under the business-as-usual scenario or under a more generous 70/30 co-insurance scheme, and the population projetion used. In all these scenarios, the implied payroll tax rates to finance the UHC program is projected to decrease as the country's population ages further.

Table 4. Projected UHC cost as share of total labor income (%)

	Medium-Fertility Scenario				Low-Fertility Scenario			
	2020	2030	2040	2050	2020	2030	2040	2050
A. Business-as-usual								
Broad labor income	1.6	1.4	1.3	1.1	1.6	1.4	1.2	1.1
Narrow labor income	3.6	3.6	3.6	3.7	3.5	3.5	3.5	3.6
B. 70/30 Co-insurance								
Broad labor income	3.6	3.3	3.0	2.7	3.6	3.2	2.9	2.7
Narrow labor income	8.1	8.3	8.4	8.6	8.1	8.1	8.2	8.6

Note: Authors' calculations.

At the other extreme, relying on a narrower tax base is projected to result in progressively increasing tax rates among those expected to actively contribute in financing the UHC program. Even under the BAU scenario, required payroll tax rates are projected to reach 3.6 to 3.7 percent. Fully implementing the UHC program may require much higher contribution rates that may even go beyond 8 percent, i.e., higher than the 5 percent cap allowed in the UHC Act, under more generous government financing regime.

6.   Policy Implications and Conclusions

Population ageing has profound effects on countries' health systems. Not only are the patterns of burden of diseases expected to change during the demographic transition, but the burden of financing as well. In this paper, we highlighted some stylized observations based on historical trends in disease burden and health financing, and the latter's potential future trajectory using the Philippines and its revitalized universal health care program as case study.

First, population aging has a direct and sizable impact on government finance based on recent historical trends and future projections of aggregate health expenditures. This accounting effect from the population age structure transition is distinct from the behavioral impact of greater health care spending per person. Population ageing may pose substantial burden not only to governments, but also to households who finance governments.

Second, faster transition into an ageing society as a result of lower fertility may not necessarily lead to greater and more abrupt health care financing burden. Indeed, our projection suggests that earlier transition to lower fertility rates may actually require less aggregate health spending to finance the same level of health care services per person. This comes as an unintended consequence of having fewer children who would have otherwise needed health care. While we have not explored this in this paper, such unfettered resources may then be used to finance other services, including quality improvements.

Third, following a widely accepted public finance principle, broadening the tax base to financially support government programs may lessen the burden among tax payers despite population ageing and even under generous government transfer regimes. In real world settings, however, this may be easier said than done for political economy reasons. Requiring all potential NHIP beneficiaries to contribute more actively to the SHI system, for example, may be politically unpopular, particularly among several interest groups that have been given preferential treatment in earlier government policies. Such may even run counter to the equity principle espoused in the Philippine's UHC Act.

Relying more actively on a more tractable but narrower tax base, i.e., prime-age non-poor employees in the case of our projections, may improve equity. However, this may induce perverse health-seeking behaviors as a result of the weaker connection between (dis)incentives and individual actions that impinge on health. Further, as shown in our projection, a narrower tax base may require progressively increasing tax rates in order to fully cover the growing

burden of health care financing in an ageing population. In such case, decoupling health care financing from labor income may be one of the more preferred solutions.

Indeed, "multiple-win" solutions to ensure universal access to health care may exist beyond what may be deemed as traditionally part of health sector financing. Greater investments on human capital, for instance, has been shown in the literature to increase labor productivity and improve later health outcomes. In turn, this may contribute to expanding the tax base and lowering the aggregate health costs for SHI systems. Along the same vein, expanding the tax base by supporting willing and able-bodied elderly to continue working may ease some of the financing burden on the prime working age population.

Other "multiple-win" solutions revolve around strengthening the incentive compatibility of individual actions and its consequences that may induce better population health and less constrains on government finances. A particularly good example from the Philippines is the use of tax revenues from tobacco and alcoholic beverages to finance the NHIP and other government services. This may be applied to other products that have potentially negative impacts on population health and therefore SHI systems, such as sugary, salty and fatty foods, as well. Another direction may be to introduce tax-exempt medical saving or investment accounts from which individuals may draw to finance future health expenditures, similar to that in Singapore and the United States, on top of that provided through the SHI system. This not only align individual behaviors with its related future health costs, but also promotes capital accumulation that contributes to greater economic productivity.

The analysis that we present here requires some important qualifications. While the projections that we employed in this study are instructive, the results are based on highly stylistic assumptions. For example, we have implicitly kept the disease burden and medical technology to be constant throughout our projection horizon. Further, we also abstracted from the effects of health insurance coverage on health-seeking behavior. Ultimately, the aggregate health care financing burden will change according to the interaction of these factors.

That said, the future of health care financing does not only involve the ability of the population to generate resources to fund health care, but also in ensuring that these services remain affordable. Demand-side interventions to lower health care costs, such as strategic purchasing and pooled procurement, are standard tools that governments may employ. Health information, surveillance, and early detection of diseases are some of the important and cost-effective public health interventions that may lower future health care financing requirements.

The Philippines, like many developing countries, is ageing. While the immediate priority may be to equip the young generation to fully benefit from the soon-closing demographic window of opportunity, the pace and extent of ageing that the country is facing begs for urgency on the part of policy makers. Otherwise, it may be too late to prepare for the impending impacts of the rising tide that is population ageing.

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