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DISCUSSION PAPER SERIES

IZA DP No. 15228

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ISSN: 2365-9793

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ABSTRACT

A Comparative Perspective on Long-Term Care Systems

This paper investigates challenges of aging for long-term care. Our analysis proceeds in three steps. In the first step, we estimate the prospective care demand for 30 developed countries based on projected aging and disabilities among the elderly. In the second step, we outline challenges for care systems with respect to shortages of care workers, increasing skill requirements for care workers, barriers to universal and equitable access to care, and cost containment subject to adequate care quality. In the third step, we identify solutions for these challenges by comparing the care systems of Germany, Israel, Japan, the Netherlands, and South Korea.

JEL Classification: J11, I18, I38, H51, H75

Keywords: long-term care insurance, population aging, care demand, ADL, IADL

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1. Introduction

Long-term care insurance (LTCI) markets are prone to market failure. Reasons for this failure are imperfect competition, insurers' uncertainty about consumers' risks of requiring care, limited incentives for consumers to avoid risks after purchasing full insurance, long intervals between the time when consumers purchase insurance and when they need it, and high insurance risks of the chronically ill (confer Barr, 1992). This failure leads to actuarially unfair insurance premiums and limited coverage (Brown and Finkelstein, 2009; Bell and Lemmon, 2021). Existing social healthcare systems cannot correct this failure because they are not designed for recipients' long-term care (LTC) needs. Therefore, several developed countries have additionally implemented social long-term care insurance to provide their citizens with universal insurance coverage for long-term care. A notable exception is the United States of America, where neither social healthcare nor social long-term care insurance exists.

Given population aging, a key challenge for public long-term care systems will be to provide an adequate level of care for a growing elderly population and a declining number of contributors. Although societies may have quite different perceptions of adequate care for cultural, institutional, and economic reasons, the implications of population aging for long-term care systems will be similar. In particular, these systems will need to accommodate an increasing number of frail elderly over the next 20–30 years. This surge in demand will require extensive policy reform to secure the sustainability of long-term care insurance and universal access to care.

To guide these reforms, this paper investigates the challenges that population aging poses to long-term care. We aim to address the following questions: How large will the aging-induced increase in the demand for long-term care be between 2020 and 2040? Which challenges do long-term care systems face when meeting this growing care demand? And, what are potential solutions to address these challenges?[1]

We proceed in three steps to answer these questions. First, we estimate the prospective increase in care demand over the period 2020–2040. Specifically, we combine the projected demographic structure with data on limitations in activities of daily living in a sample of the elderly from 30 countries to compute the growth in the population share that will rely on long-term care because of old age. We view this share as an approximation of care demand. Our analysis concentrates on EU countries, Switzerland, Israel, the United Kingdom, and the United States for which we have comparable data on limitations in activities of daily living. Our results predict an average increase in care demand of 47 percent with the largest increases in Southern and Eastern Europe. Our results further highlight that good population health—in terms of a low disability share among the elderly—can moderate growth in care demand.

[1] In our discussion, we focus on solutions to meet growing care demand. We acknowledge that growing care demand may also require a trade-off between expenditures on long-term care and other social-security programs because of finite budgets and saturated contributory capacity of the workforce. However, a discussion of this trade-off is beyond the scope of this paper.

Second, we discuss potential challenges to long-term care systems that are caused or reinforced by growing care demand. Specifically, we discuss shortages in the long-term care workforce, increasing skill requirements for care workers, barriers to universal and equitable access to care, and cost containment subject to adequate care quality. Our discussion highlights that growth of the care workforce has kept pace with population aging only in few countries in recent years. Moreover, we point out the importance of eligibility criteria for equitable access to care, care quality, and costs.

Third, we compare the long-term care systems of Germany, Israel, Japan, the Netherlands, and South Korea to formulate potential solutions for meeting growing care demand based on their experiences. We focus on these countries because their long-term care systems typify many of the formal approaches to care in developed countries. This comparison suggests that extending the care workforce requires that work in care professions becomes more attractive and that care workers be recruited from a larger candidate pool. Moreover, we compare different approaches to cost control focusing on their implications for care quality. Finally, we conclude this paper by emphasizing prevention and rehabilitation as promising avenues to promote individual wellbeing and absorb pressure from long-term care systems.

2. Demand for Long-Term Care Insurance in Aging Societies

To understand the extent to which population aging raises care demand, we estimate the prospective demand potential based on projected demographic change and individuals' limitations in pursuing an independent life.

We start by comparing the population share of the elderly in 2020 with the projected population share in 2040. Data are from the United Nations (2019). Figure 1 documents a considerable rise in the elderly population for selected countries, as measured by the share of persons over age 65 and over age 80. On average, the share of persons over 65 will increase by more than one-third from 19.6 percent in 2020 to 26.7 percent in 2040. This increase is even more pronounced for the share of persons over 80: the share will increase by 69 percent from 5.2 percent in 2020 to 8.8 percent in 2040.

Furthermore, the figure shows considerable heterogeneity in aging across countries. For example, Italy, Greece, and Spain are aging particularly fast among the countries with a comparably old population in 2020, whereas Finland, Sweden, and Denmark are aging rather slowly. Moreover, some countries in 2020 still have a comparably young population, such as China, Israel, and South Korea. However, while Israel's population is aging slowly, China's and South Korea's population are aging faster than any other population. Much of this variation in the elderly share can be attributed to country differences in declining fertility rates, dynamics in life expectancy, and past variations of birth and death rates that produced particularly large cohorts, such as the baby boom generation (Bloom and McKinnon, 2010).

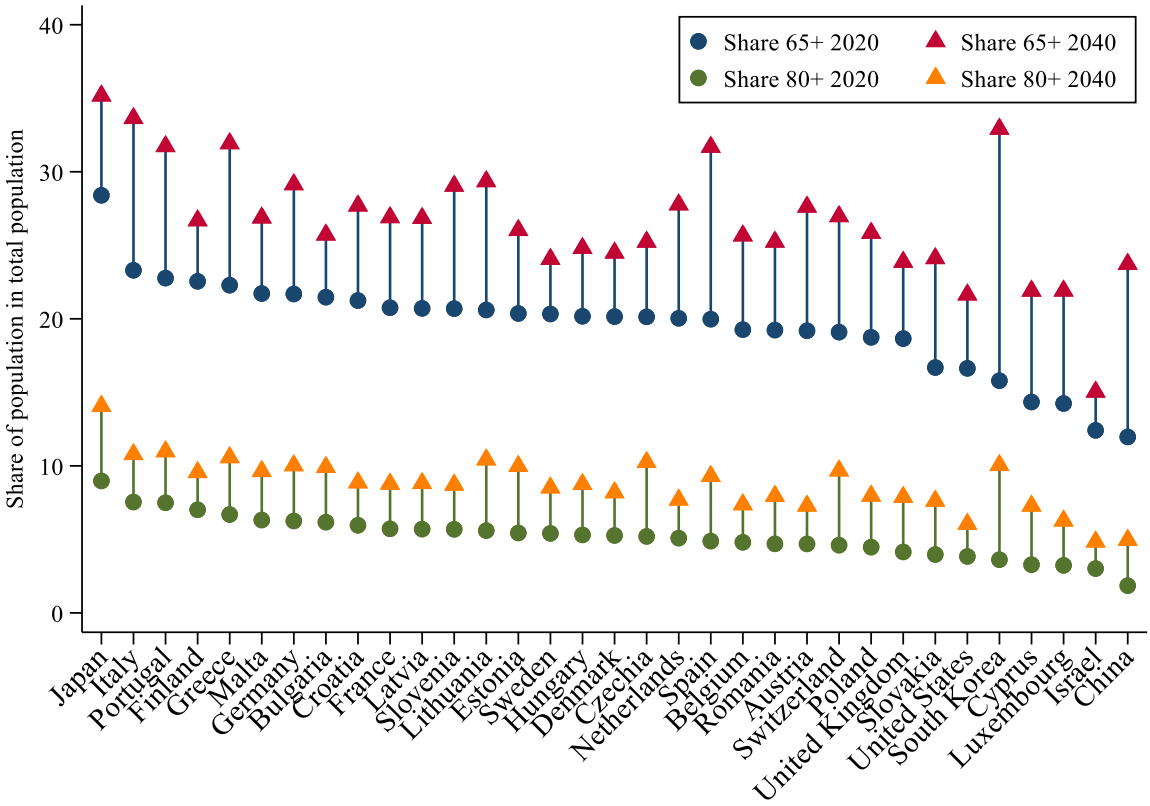

Figure 1. Population aging in selected countries. *The figure shows the share of persons over age 65 (age 80) in the total population. Data source: United Nations (2019).*

Together, the projections of the elderly share indicate that long-term care systems in all these countries will face a considerable growth in potential care recipients and that this growth will be particularly pronounced for fast-aging countries.

Fortunately, however, not every elderly person will need long-term care. To learn more about what fraction of the elderly will rely on long-term care, we use individual-level data from a family of surveys on health, aging, and retirement that are representative at the country level and comparable across countries. Specifically, we use data from the Survey of Health, Ageing and Retirement in Europe (SHARE) for the EU-27 countries and Israel, the Health and Retirement Study (HRS) for the United States, and the English Longitudinal Study of Ageing (ELSA) for England. We draw data from the most recent survey waves, which were collected around the same time but before the COVID-19 pandemic. Therefore, we use data from SHARE wave 7 (Börsch-Supan, 2020), HRS wave 13 (HRS, 2021a, 2021b), and ELSA wave 8 (Banks et al., 2021), which were collected over the period 2016–2017. Because the Netherlands did not participate in SHARE wave 7, we add data from wave 8 (Börsch-Supan, 2021).

We measure the share of frail elderly as the population over age 65 and over age 80 with at least two limitations in activities of daily living (ADL) or instrumental activities of daily living (IADL) combined. We construct this measure from five limitations in both ADL and IADL, which are available consistently across surveys. For limitations in ADL, we use information on whether individuals have difficulties with (i) dressing (including shoes and socks), (ii) walking across a room, (iii) bathing or showering, (iv) eating or

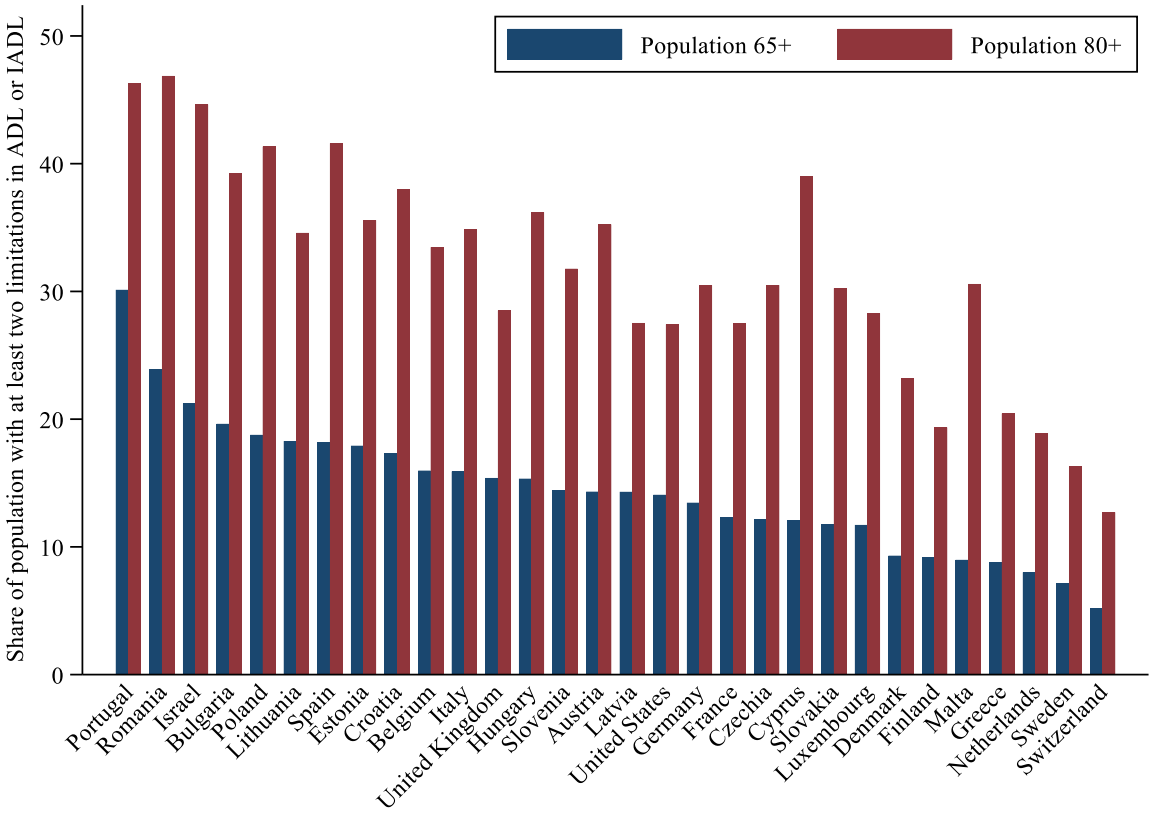

Figure 2. Share of elderly with disabilities in selected countries. *The figure shows the share of individuals over age 65 (age 80) with at least two limitations in ADL or IADL. The values for the United Kingdom refer to England. Data sources: Banks et al. (2021), Börsch-Supan (2020, 2021), and HRS (2021a, 2021b).*

cutting up food, or (v) getting in and out of bed. For limitations in IADL, we use information on whether individuals have difficulties with (i) preparing a hot meal, (ii) shopping for groceries, (iii) making telephone calls, (iv) taking medication, or (v) managing money. In total, elderly individuals can have between 0 (no disability) and 10 limitations in ADL and IADL (severe disability).

Limitations in ADL and IADL are well suited to approximate the fraction of the elderly that requires care for several reasons. First, they are predictive of whether individuals rely on formal or informal care at home or have stayed in a nursing home. Second, they correlate with aggregated measures of care needs, such as the average amount of care hours and domestic help individuals receive per week. Third, they are predictive of whether individuals suffer from dementia, which is expected to become one of the major drivers of old-age disability in the foreseeable future (Counts et al., 2021). And, fourth, they form an integral component of eligibility assessment tests that many countries use to determine for which benefit levels or care arrangements potential care recipients qualify.

Figure 2 shows the share of individuals over age 65 and over age 80 with at least two limitations in ADL or IADL. We concentrate on two or more limitations to exclude mild forms of disability, which often do not require long-term care. On average, 14.5 percent of individuals over 65 have two or more limitations in ADL or IADL. This number

increases to 31.7 percent for individuals over 80. However, countries vary considerably. Only 5 percent of the elderly over 65 in Switzerland have two or more limitations compared with 30 percent in Portugal. With a few exceptions, the elderly share with two or more limitations is higher in Eastern and Southern Europe than in Northern and Western Europe. Germany, the United Kingdom, and the United States fall in the middle of this distribution. This heterogeneity also obtains for the elderly population over 80, though the relative differences shrink somewhat in size.

Together with the demographic projections, these numbers indicate that the number of potential care recipients will rise as population aging raises the elderly share in the population and shifts more mass into the age group over 80 in which disabilities are widespread. In addition, the figure suggests that population aging will hit Southern and Eastern European countries, where a high share of elderly individuals have disabilities, particularly hard.

To get a sense of the quantitative dimension of the aging-induced increase in care demand, we estimate the share of the population that will likely rely on long-term care. Specifically, we combine the projected change in the relative size of the age groups 65–79 and over 80 between 2020 and 2040 with our age-specific data on limitations in ADL and IADL from 2016–2017 and then compute the share of the total population that is over 65 and has at least two limitations in ADL or IADL. By construction, this measure only captures disability of individuals over 65, so that it only reflects the care demand that is due to old age. We view the growth in this measure as a coarse approximation of the expected increase in care demand related to population aging.

Figure 3 presents the results of this projection exercise. On average, population aging raises the share of the population that will likely rely on long-term care from 2.9 and 4.2 percent, which corresponds to an increase in care demand of around 47 percent. Again, countries vary considerably. With few exceptions, care demand is higher in Southern and Eastern Europe than in Western and Northern Europe. In absolute terms, projected care demand increases most in Portugal, Poland, and Spain and least in Switzerland and the Scandinavian countries. In relative terms, projected care demand increases most in Cyprus, Slovakia, and Malta (around three-quarters) and least in Bulgaria, Sweden, and the United Kingdom (around one-third). Germany faces a similar increase in care demand as the United Kingdom, whereas the United States and France fall in the middle of this distribution.

This evidence highlights the interplay of population aging and population health for the prospective need for long-term care. The projected growth in care demand is most pronounced in countries that are aging fast and concomitantly have a high prevalence of disabilities among their elderly. The coincidence of these two forces will pose challenges for long-term care systems in Southern and Eastern Europe in particular. Moreover, the evidence indicates that good population health can absorb significant pressure on long-term care systems. For example, Switzerland and the Netherlands face only moderate growth in projected care demand, even though their populations are aging comparably fast. The reason for this moderate growth is the low prevalence of disabilities compared with other countries in our sample. Measures that prevent

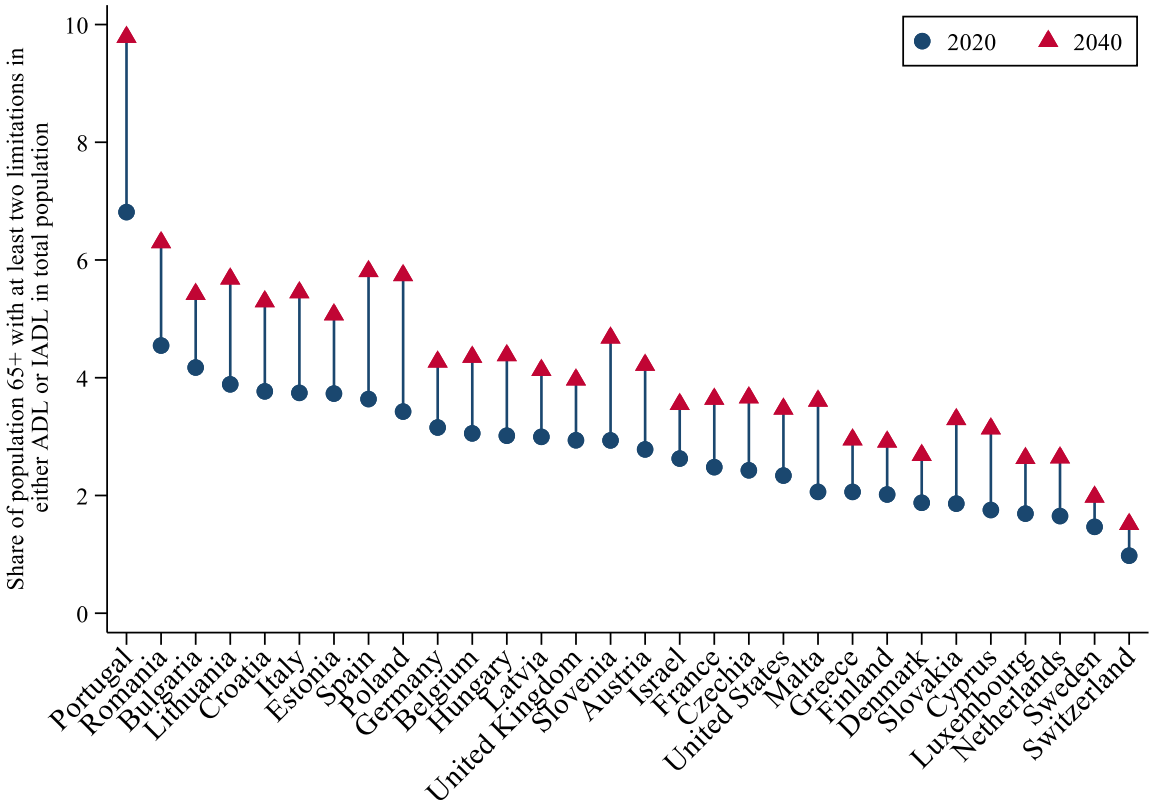

Figure 3. Projected demand for long-term care in selected countries. *The figure shows the share of the population that is composed of individuals over age 65 with at least two limitations in ADL or IADL. Data sources: Banks et al. (2021), Börsch-Supan (2020, 2021), HRS (2021a, 2021b), and United Nations (2019).*

disability and support the elderly in leading independent lives may therefore help countries reduce the pressure on long-term care systems and increase individual wellbeing. We return to this point at the end of this paper.

Altogether, our evidence shows that population aging significantly raises the demand for long-term care in developed countries. This rise will increase and intensify challenges for long-term care systems to provide an adequate level of care for the elderly population. We discuss these challenges next.

3. Challenges for Long-Term Care Systems to Meet Growing Demand

Population aging requires long-term care systems to significantly extend their service capacity to keep up with growing demand for social as well as medical care. In this section, we discuss four challenges that long-term care systems face when trying to meet additional demand: (i) overcoming supply shortages of care workers, (ii) meeting skill requirements of care workers, (iii) providing access to adequate care, and (iv) keeping cost of care systems under control while guaranteeing a minimum quality of care services. We formulate potential solutions to these challenges in Section 4.

3.1 Supply Shortages of Long-Term Care Workers

Long-term care services are labor intensive. Meeting the prospective care demand therefore requires a considerable extension of the care workforce, including qualified nurses and personal care workers who can assist with activities of daily living or provide personal support. According to the Organisation of Economic Co-operation and Development (OECD, 2020, pp. 34–35), the absolute number of nurses and personal care workers increased in half of its member states between 2011 and 2016, and it has increased for at least one of the two groups in three-quarters of OECD member states. In relation to the elderly population, however, the care workforce has grown only in a few states (for example, Germany, Israel, and Japan) and has stagnated in most other OECD states (OECD, 2019, Figure 11.25).

Of course, holding the ratio of care workforce to elderly population constant in the context of population aging is a success if the care sector can reasonably meet the care needs of citizens. However, if the number of total available carers is low, a stagnating ratio implies that the brunt of care must be borne by informal care, which can effectively substitute for formal care only if care needs are low and do not require professional skills (Bonsang, 2009). This concern applies in particular to countries in Southern and Eastern Europe, where the care workforce is significantly below the OECD average (OECD, 2019, Figure 11.25). In these countries, informal care is indeed more widespread than in Northern and Western European countries (Barczyk and Kredler, 2019), whereas satisfaction with long-term care systems is lower (Carrera et al., 2013, Figure 2.13). Making matters worse, informal care provision can come with significant economic costs for caregivers who tend to reduce labor supply in order to provide care (see Bauer and Sousa-Poza, 2015, for a literature survey). These costs are predominantly borne by women who constitute the majority of caregivers (OECD, 2019, Figure 11.21), and they counteract gains from policies promoting employment—especially of women—to retain fiscal sustainability of social security.

3.2 Skill Requirements of Care Workers

Care tasks span a broad range of activities including assistance with activities of daily living, administration of medication, health status monitoring, psychological support, and case management. These tasks require sufficient skills of both personal care workers and nurses, which presents challenges in practice.

Training requirements for personal care workers are low in many countries, although personal care workers are involved in monitoring care recipients' health status, the implementation of care plans, and communication with relatives (OECD, 2020). In contrast, training requirements for nurses are high. In half of the OECD member states, nurses must have a bachelor's degree or equivalent vocational training (OECD, 2020). Nevertheless, nurses rarely receive specialized training in geriatrics, which is required for dealing with aging-induced diseases, such as dementia (OECD, 2020). Moreover, foreign nurses often work as personal care workers because their degrees are not fully acknowledged.

These shortcomings in meeting skill requirements impair care quality. This situation is additionally aggravated by low pay, limited career prospects, and low perceived respect and appreciation for care work, which can produce high turnover at care facilities and thus further deteriorate care quality and productivity (Squillace et al., 2008). Moreover, care workers' low pay, education, and social status may contribute to elder abuse among other things (Abolfathi Momtaz et al., 2013). Finally, the mismatch between skills and tasks of foreign nurses raises ethical concerns about recruitment of migrant care workers from less-developed countries that encounter similar challenges from population aging but that cannot retain their skilled workers.

3.3 Access to Adequate Care

Access to care can be viewed as the availability of care services, their accessibility by potential recipients, and their utilization (Brugiavini et al., 2017; for a discussion of different conceptualizations of access, see Levesque et al., 2013). Long-term care systems regulate this access along three axes. First, they implement the legal and institutional framework that determines private and public care provision. Second, they define under which conditions an individual qualifies for any support from long-term care insurance. And, third, they impose criteria that assign benefit levels or claims to benefits or care services for eligible recipients. In public long-term care systems, these regulations are often codified as legal entitlements to guarantee universal and equitable access to care (for example, in Germany, Japan, and the Netherlands).

The design of these regulations poses challenges to long-term care systems that are reinforced by demographic change. On the one hand, eligibility criteria determine the weighting of physical, cognitive, and psychological impairments for access to care. To provide adequate care, this weighting must account for disabilities that will become more widespread as populations age. For example, until a reform in 2017, many dementia patients in Germany received few benefits because the eligibility criteria emphasized physical functioning more than cognitive and psychological functioning (Theobald and Hampel, 2013; Federal Ministry of Health, 2021). On the other hand, adequate care requires the assignment of benefit levels to be flexible enough to account for differential care needs. For example, until a reform in 2018, Israel's long-term care insurance assigned similar benefit levels to recipients with different care needs, such that the benefits were not always adequate to meet the care needs of more disabled recipients (Asiskovitch, 2013; Cohen, 2020).

3.4 Costs of Long-Term Care Systems and Quality of Care Services

Providing universal access to care services of sufficient quality is expensive. With growing demand, long-term care systems will face considerable financial strain. To provide an acceptable supply of care services nonetheless, policymakers need to promote efficiency of long-term care systems without jeopardizing care quality. In pursuing this goal, policymakers will encounter several challenges.

First, the design of eligibility criteria determines much of the quality and costs of long-term care systems. Ceteris paribus, a more generous design of these criteria provides benefits to a larger number of recipients and grants higher benefits per recipient (that is, more and better services) than a thriftier design. Hence, the eligibility criteria imply a tradeoff between the costs and quality of care systems. Growing care demand and changing care needs may challenge existing benefit structures and result in excessive costs or inadequate service quality. Second, care needs to follow stable long-run trends in demography, which require reliable funding. Funding can take place at the federal, regional, or municipal level, depending both on the tasks each level performs and path dependency in institutions. While strong involvement of municipalities seems ideal to provide services close to the people in need, municipal funding can vary considerably if tax revenues and demographic structure correlate with economic performance. This variation may impede equitable access to care if long-term care insurance does not sufficiently pool risks to stabilize funding streams. Third, insufficient funding of long-term care may shift costs into the healthcare sector and create new financial strain.

In order to deal with these problems, many long-term care systems try to improve cost efficiency by promoting competition between private and public care providers. Competition is an effective way to improve efficiency if providers compete over prices for a given level of service quality. However, this rationale fails if providers compete over quality rather than prices. In this case, care costs do not fall, but care quality deteriorates. We turn to potential solutions for the above-mentioned challenges next.

4. Experiences and Potential Solutions from Selected Countries

Growing care demand poses considerable challenges for long-term care systems. In this section, we compare the care systems of Germany, the Netherlands, Israel, Japan, and South Korea to highlight potential avenues for addressing these challenges. We focus on these countries because their care systems encompass many of the formal approaches to long-term care around the world. Table 1 provides a brief overview of each of these systems with respect to (i) welfare system and funding, (ii) access, (iii) benefits, (iv) service provision, and (v) system structure.

In each of these countries, compulsory long-term care insurance accounts for the lion's share of care. The systems are mainly financed by payroll contributions (Germany and Israel) or by a mix of payroll contributions and taxes (Netherlands, Japan, and South Korea). Copayments help care systems control costs by lowering incentives for service use (Soga et al., 2020) and redistribute economic burdens among income groups through means-testing (Wouterse et al., 2021).[2] Access is regulated by assessment tests, which in some form consider living circumstances and impairments in mobility,

[2] More generally, work on the implications of insurance copayments for service use in the health context dates back as far as to the Rand Health Insurance Experiment in the 1970s, which documented that demand for medical services falls as copayments rise (see, for example, Manning et al., 1987). Many of the conceptual arguments raised in this literature also extend to long-term care insurance.

cognitive ability, behavior, ADL, and IADL. In Israel, benefits are additionally means-tested, so people receive benefits only if their household income does not exceed certain income thresholds linked to the average wage (Asiskovitch, 2013). All systems provide in-kind benefits with the possibility of cash benefits in Germany, the Netherlands, and Israel. Services are provided at the local level with varying degrees of consumer choice, whereas funding mainly takes place at higher organizational levels. Germany and the Netherlands have a multipayer system with numerous regional care funds or care offices, whereas Israel, Japan, and South Korea have a single-payer system with care insurance organized at the national level. We next examine how these countries address challenges from growing care demand.

4.1 How Can the Care Workforce Be Extended and Shortages Be Avoided?

One solution is to make work in care professions more attractive. Germany has launched several measures to enhance working conditions in the care sector. These measures include care-specific minimum wages and regulations that foster collective bargaining; improved compatibility of family and work; a uniform nursing education combining general, geriatric, and pediatric nursing; and remunerated, free-of-charge nursing education (Federal Ministry of Health, 2021). Additional measures reduce the economic costs of informal care. In particular, care recipients can compensate informal caregivers with cash benefits, and long-term care insurance contributes to social security for performed care hours if caregivers work 30 hours per week or less (Federal Ministry of Health, 2021, pp. 53–54).

Another solution is to recruit care workers from a larger candidate pool. For example, Japan offers unemployed people training programs and job opportunities in long-term care, which raised the number of care workers by 320,000 between 2011 and 2015 (OECD, 2020, p. 50). An alternative strategy is to recruit foreign care workers. In Israel, for example, more than half of long-term care workers are foreigners (Asiskovitch, 2013, p. 15). To facilitate recruitment of foreign care workers, the German Federal Employment Agency coordinates with its partner institutions to attract trainees and care workers from Bosnia and Hercegovina, Brazil, El Salvador, Mexico, the Philippines, Tunisia, and Vietnam (Federal Ministry of Health, 2021, p. 49). This coordination aims to improve acknowledgment of foreign degrees, accelerate visa processing, and raise ethical standards for recruitment from outside the European Union (Federal Ministry of Health, 2021, pp. 49–50). Finally, Germany, Israel, and the Netherlands create financial incentives for informal care by allowing recipients to pay caregivers with cash benefits.

Table 1. Long-Term Care Insurance in Selected Countries.

Country	Welfare system and funding	Access	Benefits	Service provision	System structure
Germany	Compulsory public LTCI with option of private LTCI for high-income earners and civil servants. Public LTCI is financed by payroll contributions and copayments.	Access is open to anybody who meets the eligibility criteria. Individuals receive benefits if they qualify for 1 out of 5 care grades. Care grades are based on impairments in mobility, cognitive ability, behavior, ADL, and IADL.	Benefits are in-kind or in cash. Benefits depend on care grades. Copayments and additional costs are borne by recipients, or by social assistance if they are too high. Cash benefits can be used to pay informal carers.	Recipients choose between institutional and home care. Care advisors help with applications, service choice, benefits, and care plans. Informal carers can receive professional training, entitlements for paid leave from work, and respite support.	Multipayer system in which care funds are organized under the umbrella of sick funds. Providers negotiate contracts with care funds and local authorities. Services must meet uniform quality standards, which are monitored regularly. Community-based LTC centers help with care management.
Netherlands	Compulsory public LTCI, which is financed by payroll contributions and copayments. Social care is tax funded at the municipal level.	Access is open to anybody who meets the eligibility criteria. Individuals receive benefits according to assessed care needs, which are based on impairments in mobility, cognitive ability, behavior, ADL, and IADL.	Benefits are in-kind or in cash. Benefits depend on care needs. Income-dependent copayments are borne by recipients. Cash benefits can be used to pay informal carers.	Recipients receive nonresidential care or residential care if nonresidential care is infeasible. Home nursing care is provided through health insurance. Recipients choose care providers. Nonresidential care is organized by insurers or municipalities. Social care is provided by municipalities. Informal carers can receive respite support.	Multipayer system with home care, institutional care, and social care. Providers negotiate contracts with regional care offices and municipalities, which purchase care from public funds. Services must meet uniform quality standards, which are monitored regularly.
Israel	Compulsory public LTCI, which is financed by payroll contributions.	Access is subject to eligibility criteria and means test. Individuals receive benefits if they qualify for 1 out of 6 benefit levels based on whether individuals live alone and on their impairments in mobility, ADL, cognitive ability, and behavior.	Benefits are in-kind or in cash. Care hours depend on benefit levels. Benefits can be used to pay informal carers only under certain conditions as LTC aims at complementing family care.	Recipients receive only home care under LTCI. Institutional care is financed by sick funds, social welfare programs, and copayments. Services and providers are determined by LTC committees. However, recipients can ask for specific providers.	Single-payer system administered by the National Insurance Institute, which issues tenders for care contracts over which LTC providers compete in a quasi-market setting. These tenders specify employment conditions, required qualifications, and wages.
Japan	Compulsory public LTCI, which is financed by payroll contributions; subsidies from national, prefectural, and municipal taxes; and copayments. Contributions are means-tested over age 65.	Access is open to anybody who meets the eligibility criteria. Individuals receive benefits if they qualify for 1 out of 2 support levels or 1 out of 5 care levels. Support and care levels are based on impairments in physical and cognitive ability, ADL, and IADL.	Benefits are in-kind only. Benefits depend on support or care level. Individuals without a support or care level may use preventive care at the community level.	Recipients choose between institutional and home care. They also choose care managers and providers. Institutional care is provided in nursing homes, geriatric health services facilities, and medical LTC sanatoriums. Care managers help with care plans and service arrangement. Informal carers can receive respite support.	Single-payer system with LTC, social care, and healthcare. Municipalities formulate service plans for which they receive funding. Municipalities license providers. Services must meet uniform quality standards, which are monitored regularly. Policy reforms aim to integrate all aspects of care in a community-based healthcare system.
South Korea	Compulsory public LTCI, which is financed by payroll contributions, tax subsidies, and copayments.	Access is open to anybody who meets the eligibility criteria. Individuals receive benefits if they qualify for 1 out of 6 care levels, which are based on impairments in ADL and IADL, cognitive ability, behavior, and mobility.	Benefits are in-kind except when in-kind provision is infeasible. Benefits depend on care levels. Means-tested copayments and additional costs are borne by recipients.	Recipients choose between home care or institutional care. Institutional care is provided in LTC facilities or in LTC hospitals. Care management is planned but not yet introduced.	Single-payer system administered by the National Health Insurance Service. Local governments regulate and license providers. Services must meet uniform quality standards, which are monitored regularly. Healthcare and LTC are separated, complicating coordination. Policy reforms aim to integrate all aspects of care in community-based care system.

Sources: Mot et al. (2010), Tamiya et al. (2011, 2020), Asiskovitch (2013), Da Roit (2013), Won (2013), Choi (2015), van Ginneken and Kroneman (2015), Maarse and Jeurissen (2016), European Commission (2017, 2019), Joshua (2017), Alders and Schut (2019), Hasson and Dagan Buzaglo (2019), Cohen (2020), Ga (2020), Yamada and Arai (2020), Federal Ministry of Health (2021), and Kim and Kwon (2021).

4.2 How Can Skill Requirements for Long-Term Care Workers Be Met?

One solution is to license care professions. Such practice is common for nurses, whereas only few countries require personal care workers to hold a license or certificate to work in the care sector (OECD, 2020, p. 14). In South Korea, for example, personal care workers receive a certificate from the local government documenting that they have the basic competencies to work in elderly care or healthcare (OECD, 2020, Table 3.4). An alternative to licensing is to regulate the tasks personal care workers are allowed to perform. In Israel, personal care workers predominantly assist with activities of daily living and provide psychological support through communication, whereas in South Korea they also help with medication and act as case managers (OECD, 2020, Table 3.1).

Apart from regulating entry into care professions, facilitating access to long-term care training improves care workers' skills. Therefore, Germany, Israel, and Japan sponsor training in long-term care; South Korea provides internship and mentoring programs; and the Netherlands offers career guidance to help care workers choose the best training options (OECD, 2020, p. 85). In addition, better curricula may improve career prospects of care workers and equip them with the skills needed for elderly care. For this reason, nursing education has combined general, geriatric, and pediatric nursing in Germany since 2020 (Federal Ministry of Health, 2021, p. 46).

4.3 How Can Long-Term Care Systems Provide Access to Adequate Care?

A common solution is to grant people legal entitlement to long-term care if they meet certain eligibility criteria. Such commitments from governments are implemented to guarantee universal and equitable access to care at the appropriate time. In the Netherlands, for example, cost containment strategies in the 1980s and 1990s resulted in rationing of care services and long waiting lists. A court decision successfully challenged this practice in 1999, which asserted that citizens have a right to timely care, thus leading to the eventual suspension of the prevailing cost containment strategies (Schut and van den Berg, 2010; Da Roit, 2013).

Once individuals are entitled to care, eligibility criteria determine the support from long-term care insurance. Typically, these criteria either define several disability levels, which entitle recipients to benefits, or they directly define benefits for or legal claims to care services depending on the type of disabilities. In Japan, for example, people receive long-term care benefits according to one of five care levels or preventive long-term care benefits according to one of two support levels (Yamada and Arai, 2020). In contrast, people in the Netherlands receive benefits according to support needs in functional domains that inter alia cover personal care, nursing care, household management, psychological health, treatment and rehabilitation, and housing (Joshua, 2017). Because eligibility criteria determine the benefit structure of long-term care insurance, assessments should be standardized to provide equitable access to care but leave sufficient flexibility for individuals' care needs.

Copayments constitute yet another dimension to regulate access to long-term care. Their purpose is twofold: on the one hand, they subsidize long-term care insurance, on the other hand, they reallocate costs to care recipients and thus influence service demand. A concern is that high copayments can financially ruin the least affluent or deter them from using care services at all (Scheil-Adlung and Bonan, 2013). Two solutions help avoid such catastrophic scenarios. In South Korea and the Netherlands, copayments are means-tested to reduce the economic burden for the poor (Won, 2013; Wouterse et al., 2021). In Germany, social assistance covers additional care costs if recipients cannot bear them (European Commission, 2017).

4.4 How Can Costs Be Controlled Without Compromising Service Quality?

Countries use direct and indirect approaches to control costs and service quality. A direct solution is to regulate care contracts. In Israel, for example, the National Insurance Institute issues tenders for care contracts, which specify employment conditions and wages for home care (Hasson and Dagan Buzaglo, 2019). This approach effectively controls costs because only the National Insurance Institute can issue tenders. However, the system has also been criticized for imposing adverse working conditions and forcing wages below levels that would emerge in competitive markets (Hasson and Dagan Buzaglo, 2019; Cohen, 2020). Similarly, the Netherlands has decentralized the provision of nonresidential care to insurers and municipalities under the assumption that they organize long-term care more efficiently than regional care offices and thus reduce costs (Maarse and Jeurissen, 2016).

Another direct solution is to regulate the types of care to which recipients have access. Historically, residential care in nursing or residential homes has been widespread in the Netherlands. Since 2015 individuals receive residential care only if home care and nonresidential care are infeasible because residential care is more expensive and many people prefer to “age in place” (Da Roit, 2013; Maarse and Jeurissen, 2016).

An indirect solution to controlling costs and service quality is competition among care providers. If consumers choose services according to their price and quality, providers will compete to offer these services at the lowest cost while adhering to adequate service quality. A concern is that without quality controls, providers will compete over quality rather than prices, thus diminishing service quality. Therefore, competition policies are usually complemented by quality standards that are monitored regularly. While each of the discussed long-term care systems promotes competition among providers, evidence on cost reductions and quality is sparse. Evidence from Sweden, the United Kingdom, and the United States indicates that competition lowers prices but that the effect is modest (Nyman, 1994; Forder and Allan, 2014; Bergman et al., 2016). Likewise, competition has modest positive effects on care quality (Zhao, 2016; Bowblis and Applebaum, 2017; Hackmann, 2019). However, supply shortages—which may increase due to population aging—can stifle competition and thus counteract beneficial effects on prices and quality (Nyman, 1988; Ching et al., 2015; Yang et al., 2021).

An important determinant of costs and care quality is the funding structure. Insufficient integration of healthcare and long-term care can lead to inadequate service provision. In South Korea, for example, admission criteria for long-term care facilities and long-term care hospitals are not aligned. This resulted in a situation wherein more than one-half of people in long-term care hospitals had only low medical care needs, whereas one-fourth of people in long-term care facilities, which are not intended to provide healthcare, had high medical care needs (Kim et al., 2015; Kim and Kwon, 2021). Moreover, insufficient coordination of healthcare and long-term care institutions can incentivize cost shifting between funding sources. In the Netherlands, care is funded from three financing regimes for social care, community nursing, and home healthcare and institutional care. This taxonomy creates incentives for municipalities, which have a fixed budget for social care, to nudge people into applying for institutional care (Alders and Schut, 2019). Jointly organizing sickness funds and care funds—as in Germany—can mitigate this problem. Nevertheless, reforms to improve coordination and integration of care remain ongoing with a trend toward integrated community-based care systems in South Korea and Japan (Ga, 2020; Yamada and Arai, 2020).

4.5 How Can Healthy Aging Help?

Our evidence on care needs indicates that care demand will grow less in countries with a low share of elderly with disabilities. This suggests that prevention and rehabilitation measures that focus on maintaining functional status and personal autonomy may be promising avenues to promote individual wellbeing and absorb pressure from long-term care systems. While rehabilitation services are common in healthcare, prevention services in long-term care are much less common. Only a few countries explicitly target disability prevention in their long-term care strategy. One such example is Japan, which in 2015 implemented a community-based population strategy that aims to promote individual autonomy by providing preventive care, healthcare, long-term care, and welfare and housing services to all individuals at the community level (Yamada and Arai, 2020). Notably, this strategy also comprises community activities, such as salons, that facilitate social activity of the elderly and are open to persons without any support or care level (Yamada and Arai, 2020). In ongoing reform processes, Germany and the Netherlands consider tele-care and redesigning living environments as alternative avenues to promote healthy aging and to preserve personal autonomy (European Commission, 2019).[3]

5. Concluding Remarks

Population aging will considerably raise the share of the population that relies on long-term care. This growth in care needs will pose challenges to the sustainability of long-

[3] The public health literature also discusses nudge-type interventions to promote healthy lifestyles. While such interventions improve targeted outcomes—such as diet—in experimental settings, it is unclear whether and to what extent they can be scaled up to the population level (see Ledderer et al., 2020, for a literature survey). To the best of our knowledge, there are currently no major interventions along these lines in Germany, Israel, Japan, the Netherlands, and South Korea.

term care systems and require extensive policy reform. To guide this reform process, this paper examines the challenges that aging poses for long-term care.

Our results document that care demand will on average rise by 47 percent with considerable differences across countries. The size of this increase depends not only on the speed of aging but also on the health of the elderly population. Therefore, care demand will grow most in Southern and Eastern Europe, where populations are aging fast and disabilities are widespread among the elderly. In contrast, good health among the elderly mitigates some of this growth in Northern and Western Europe.

The growth in care demand will pose and reinforce challenges for long-term care systems with respect to care supply, service quality, and costs of long-term care insurance. We particularly highlight challenges concerning shortages in the long-term care workforce, increasing skill requirements for care workers, barriers to universal and equitable access to care, and cost containment subject to adequate care quality. We identify potential solutions for these challenges by comparing the long-term care systems of Germany, the Netherlands, Israel, Japan, and South Korea. Our discussion indicates that extending the care workforce requires care professions to become more attractive. Moreover, the discussion highlights eligibility criteria for access to care systems as a central determinant for costs and service coverage. We conclude this paper by emphasizing prevention and rehabilitation measures as promising avenues to promote individual wellbeing and absorb pressure from long-term care systems by improving the health of the elderly.

Acknowledgments

This paper uses data from SHARE waves 7 and 8. SHARE data collection was funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982, DASISH: GA N°283646), and Horizon 2020 (SHARE-DEV3: GA N°676536, SHARE-COHESION: GA N°870628, SERISS: GA N°654221, SSHOC: GA N°823782) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, and VS 2020/0313. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, HHSN271201300071C, RAG052527A) and from various national funding sources is gratefully acknowledged (see www.share-project.org).

This paper also uses data from ELSA wave 8. The English Longitudinal Study of Ageing was developed by a team of researchers based at University College London, NatCen Social Research, the Institute for Fiscal Studies, the University of Manchester, and the University of East Anglia. The data were collected by NatCen Social Research. The funding is currently provided by the National Institute on Aging in the United States

and by a consortium of UK government departments coordinated by the National Institute for Health Research. Funding has also been received by the Economic and Social Research Council.

Finally, this paper uses data from HRS wave 13 obtained from the RAND HRS Longitudinal File. The RAND HRS Longitudinal File is an easy-to-use dataset based on the HRS core data. This file was developed at RAND with funding from the National Institute on Aging and the Social Security Administration. The HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan.

Financial support for this research was provided by the Jiangsu Industrial Technology Research Institute, China.

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