THE MAIN CHARACTERISTICS OF THE INSURANCE MARKET FOR LONGEVITY RISK: A LITERATURE REVIEW

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ABSTRACT

Longevity risk is the probability of surviving more than own financial resources. This paper aims to define the characteristics of the insurance market for longevity risk. First, it identifies the aging of the population between the OECD countries and the need for long-term care services (i.e., their quality of life). Second, it tries to summarize the main characteristics of the insurance market for longevity risk from the literature point of view. According to the financial literature, the market to ensure the aging population's long-term needs can be considered a puzzle as there are some constraints from the two sides of the market. From the demand point of view, two issues limit the request for insurance products: the role of the State and misunderstanding about the exposure at risk by the population. At the same time, there are other constraints from the supply point of view: the adverse selection and moral hazard issues that impact the pricing of longevity risk. All these constraints limit the growth of this market. Third, it identifies some suggestions for further investigation in the growing field of financial literature. This paper contributes to the existing literature by identifying the constraints that avoid the insurance market's growth for longevity risk and by remembering some solutions to reassess the role of the welfare state.

INTRODUCTION

The share of the population aged 65 and over has multiplied in the last decades across OECD countries (OECD, 2021). At the same time, the request for care services has increased. According to Konetzka et al. (2019), long-term care is the most considerable uninsured risk facing a developed country. *How to finance these needs?* The States provide the primary source of financing. Still, it is necessary to redefine its role to increase the sustainability of the public spending and the part of the private market and, especially, the insurance market.

This paper aims to discuss the status quo of the financial literature on long-term care insurance after identifying the demographic trends of the elderly. More specifically, it first defines the so-called "silver tsunami" characteristics in terms of people aged 65 years or over and long-term care services. Second, it analyzes the financial literature on longevity risk, especially on insurance products that lead with this type of risk: long-term care insurance. Finally, it discusses some solutions that emerge from the literature review. It contributes to the debate about the aging and long-term care that occurs across OECD countries.

The "silver tsunami"

The share of the population aged 65 and over has multiplied in the last decades across OECD countries (OECD, 2021). In 2019, it ranged from 6.0 in Indonesia and Korea to 28.4 in Japan. More specifically, Figure 1 considers this share for 2019 and the projection for 2050 by OECD (e.g., OECD Historical Population Data and Projections Database, 2021).

The population aged 65 or over will rise from 17.3% in 2019 to 26.7% by 2050 for OECD with 38 countries. In five countries (Greece, Italy, Japan, Kore, and Portugal), the share of the population aged 65 and over will exceed one-third by 2050. The oldest group, i.e., the share of the population aged 80 and over, i.e., the people in the fourth age, will increase simultaneously: the percentage will increase from 4.6% to 9.8% in the same period for OECD with 38 countries. In Greece, Italy, Japan, Korea, and Portugal, more than one in eight people will be 80 and over. According to the newspapers, this data seems to be a "silver tsunami," referring to the color of the hair of the elderly and the number of them.

People in the fourth age generally require assistance as they have cognitive limitations or chronic conditions. They can have to need help with activities of daily living (ADLs) (e.g., eating, bathing, dressing, toileting, and transferring) or instrumental activities of daily living (IADLs) (e.g., preparing meals, housekeeping, money management, and using a telephone). From this point of view, it is essential to differentiate life expectancy from healthy life expectancy. The OECD states that life expectancy measures how long a person of a given age can expect to live if current death rates do not change. In contrast, healthy life expectancy is the disability-free life expectancy (or healthy life-years), the number of years spent free of activity limitation. Figure 2 distinguishes the population aged 65 by sex. The countries in the Figure are ordered by the years of life expectancy. Still, if we consider the disability, there is a significant difference between countries as Norway or Sweden (about 15 years free from disability) and countries such as Latvia or the Slovak Republic (only five years free from disability for both men and women).

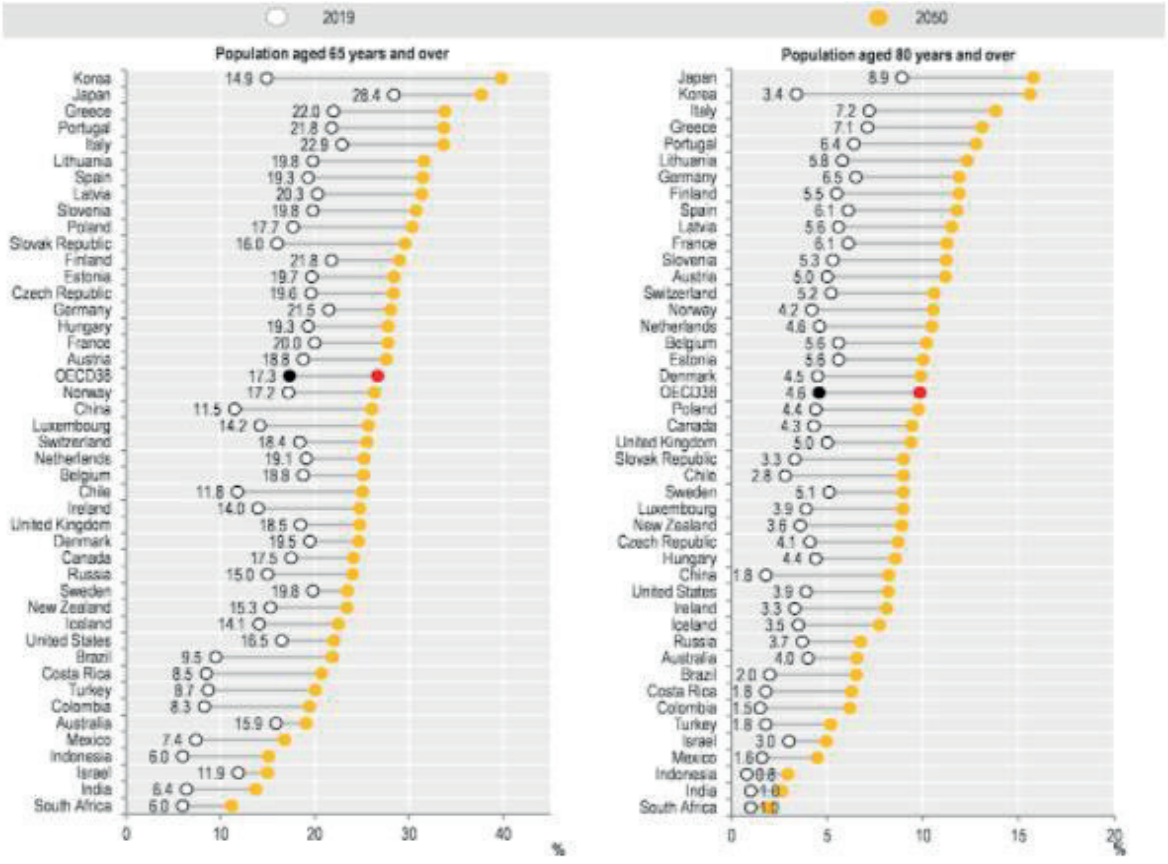

Fig. 1 – *Share of population aged 65 or over and 80 years and over, 2019 and 2050*
Sources: *OECD Health Statistics 2021, OECD Historical Population Data and Projections Database, 2021. https://www.oecd-ilibrary.org/sites/ae3016b9-en/1/3/10/1/index.html?itemId=/content/publication/ae3016b9-en&_csp_=ca413da5d44587bc56446341952c275e&itemIGO=oecd&itemContentType=book&_ga=2.168413089.1089028379.1637235195-1335240117.1637235195*

The financing of long-term care expenditure represents a significant problem for most OECD countries. It is possible to identify two primary sources of funding: the State through the National Health System (Medicaid in the USA, for example) according to the pursed welfare regime and the private sector through insurance products, such as long-term care insurance. When people have not underwritten insurance products, they face long-term care expenditure through their savings.
Figure 3 shows the share of GDP allocated in long-term services.

On average, long-term care services absorbed 1.5% of GDP in 2018 for OECD with 36 countries. It corresponds to around USD 760 per capita. The Netherlands allocate about 4% of GDP to this need, whereas Chile, Greece, and Turkey show a deficient level of this expenditure. From this point of view, it is essential to distinguish medical and nursing care in a nursing home and personal care at people's homes, which provide help with ADL, from the assistance services, which provide support with IADL.
Figure 4 shows the share of people aged 65 or over who need help with ADL. There is no information on assistance services across OECD countries.

On average, for OECD with 23 countries, 10.7% of people aged 65 or over received long-term care in 2019. 2019 shows the general increase of this share expect for the Netherlands and some other countries.

From a literature point of view, it is interesting to explore how to increase the financing of long-term care expenditure with sources that are different from the public system. Suppose the public funding decreases in the following years because of the new definition of the criteria for access to long-term care services. In that case, it should increase saving to enter into long-term care insurance products.

A literature review on long-term care insurance

Long-term care insurance is the most effective coverage of longevity risk (Brown and Finkelstein, 2009). The financing of this expenditure may be borne by the national health system or by the insurance market. Both the public system and the insurance market have some problems in financing the long-term care expenditure. The public health system can be considered at the same time as the largest payer of long-term care and a payer of last resort of this expenditure: this means that there needs a re-equilibrium of how to finance long-term care expenditure. On the other side, the long-term care insurance market is relatively tiny worldwide as it shows at the same time ex-ante adverse selection problems and ex-post more hazard issues. These issues are hard to resolve and impact the pricing process of long-term care insurance on the supply side. On the demand side, there are problems linked to the behavior of individuals as awareness of the existence of long-term care insurance is low. According to Pestieau and Ponthière (2012), the long-term care insurance market is a puzzle hard to solve.

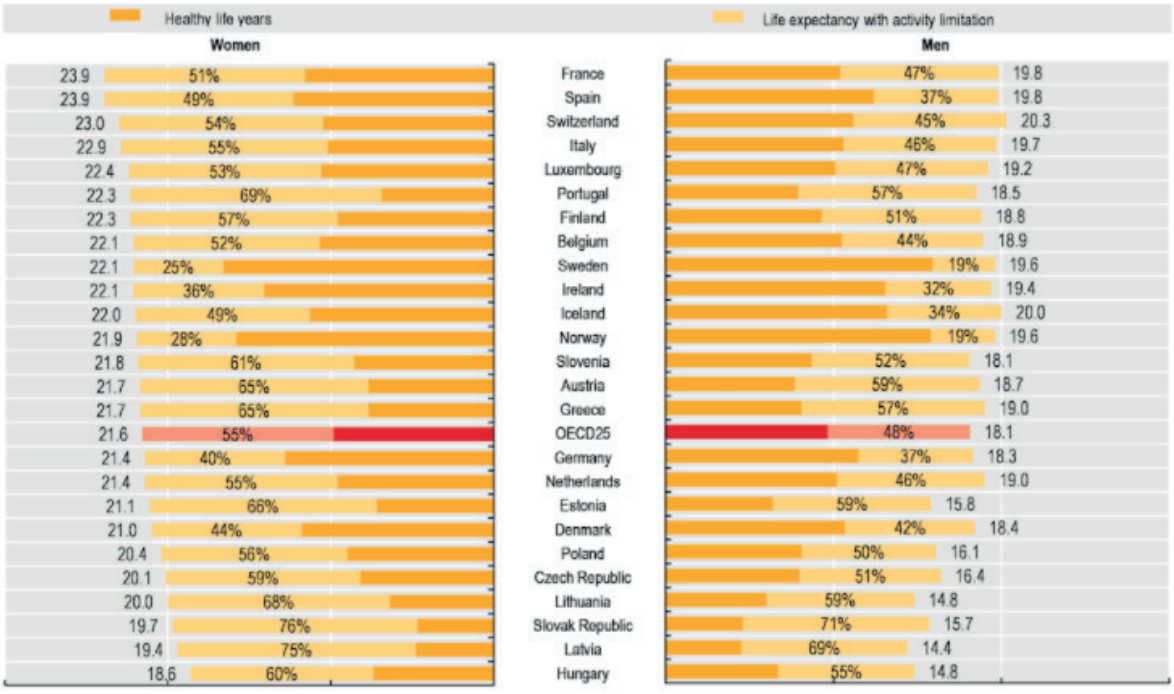

Fig. 2 - *Life expectancy and healthy life-years at age 65, by sex, 2019*[(1)]
Note: *"healthy life-years" is defined as the number of years spent without activity limitation*
Source: *Eurostat database. https://www.oecd-ilibrary.org/sites/ae3016b9-en/1/3/10/2/index.html?itemId=/content/publication/ae3016b9-en&_csp_=ca413da5d44587bc56446341952c275e&itemIGO=oecd&itemContentType=book&_ga=2.168413 089.1089028379.1637235195-1335240117.1637235195*

More specifically, Finkelstein and McGarry (2006) face the issue of ex-ante adverse selection in the long-term care insurance market. They show that the adverse selection has a solution: the favorable selection of more-risk averse people and healthier people balances the adverse selection of sicker individuals.

Conversly, Konetzka et al. (2019) face the issue of ex-post moral hazard in long-term care insurance. In this context, the moral hazard consists of an insured person who is more likely to require assistance for daily living activities than the uninsured. From an econometric point of view, this is an endogeneity issue. The authors use an econometric approach that combines propensity score matching with the instrumental variables approach to deal with this issue. They refer to the multiple waves of the Health and Retirement Study to identify changes in long-term care insurance ownership that cannot be affected by the adverse selection problem. They analyze two types of long-term care, i.e., nursing home care and home care, paid by private long-term care insurance. They find evidence of significant moral hazard in-home care use and a potentially meaningful but noisy effect on nursing home use.

Boyer et al. (2019) study the demand side of the long-term care insurance market and evidence the role of risk misperception. When individuals obtain information about their health and the long-term care risk or provide informal care to relatives, they modify their intention to purchase long-term care insurance. The authors test three types of misperception about the long-term risk: the probability of needing care at home or of entering a nursing home or living until

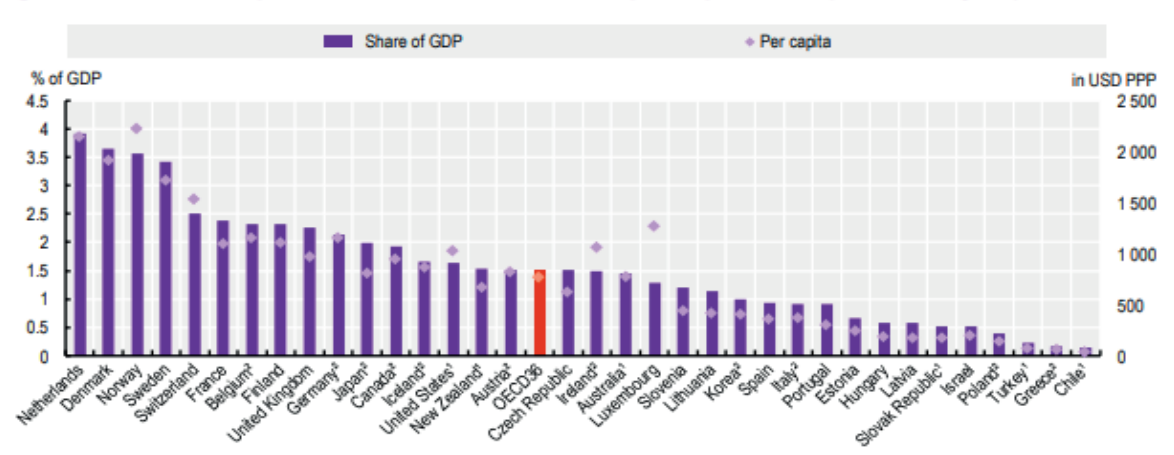

Fig. 3 – *(Total) expenditure as a share of GDP and per capita, 2018*
Source: *OECD (2021), spending on long-term care, https://www.oecd.org/health/health-systems/Spending-on-long-term-care-Brief-November-2020.pdf*

Fig. 4 – *Share of adults aged 65 or over receiving long-term care, 2009 and 2019*
Source: *OECD Health Statistics 2021. https://www.oecd-ilibrary.org/sites/ae3016b9-en/1/3/10/6/index.html?itemId=/content/publication/ae3016b9- en&_csp_=ca413da5d44587bc56446341952c275e&itemIGO=oecd&itemContentType=-book&_ga=2.168413089.1089028379.1637235195-1335240117.1637235195*

85 years old. They find that these misperceptions and the intention to buy a long-term care product are significantly and positively correlated. According to their results, if it is possible to simultaneously correct all the misperceptions about three dimensions of long-term care risk, the long-term care take-up would increase by at most one percentage point.

In the same way, Zhou-Richter et al. (2010) analyze adult children's misperception of long-term care risk due to their role in providing care and financial assistance to relatives. In some countries, such as Germany, adult children are legally compelled to assist ailing parents who have exhausted their financial resources. Furthermore, the adult children do not discount information on long-term risk as their parents could be. According to the authors' survey results, about 30% of the respondents, without the initial willingness to buy, are interested in buying long-term care products after being informed about the average likelihood to need care (long-term care risk) and the associated costs.

DISCUSSION AND CONCLUSIONS

To understand how to solve the long-term care puzzle, this paper identifies some solutions on the demand side that can positively affect the supply side. The problem of misperception about the exposure at long-term risk by the population can be solved in two ways. It could be possible to create an agency to promote awareness as in the USA (https://acl.gov) or a committee to increase financial education as in Italy (http://www.quellocheconta.gov.it). The Administration for Community Living (ACL) offers services to older adults and people with disabilities who prefer to live in their communities rather than in the institutions(2).

The Committee for financial education promotes many initiatives to increase Italy's financial, retirement, and insurance literacy(3).
These solutions have a cost that the State could face.

The introduction of public long-term care insurance can be another solution to solve the misperception problem. For example, Germany introduced general long-term care insurance in 1995 for all citizens(4). There are two forms: social long-term care insurance for individuals with an income up to a specified threshold and the possibility of mandatory private long-term care insurance for individuals beyond this threshold. This solution can be adapted to other countries taking into account the total tax burden of their citizens.

The fiscal incentives for long-term care insurance products can represent a less drastic solution than the previous one. This solution may be effective in those countries where the tax burden of citizens is relatively low among OECD countries.
Each of the solutions discussed should take an increase of insured people. That increase could mitigate the adverse selection issue, as shown by Finkelstein and McGarry (2006), and the moral hazard problems that affect the supply side (Konetzka et al., 2019). Until today, the people have considered the public programs for long-term care as an imperfect substitute for the correct mode of financing these needs. Suppose the State discloses the alternatives on how to finance the long-term needs, reduces its assistance, or re-engines its help through the public scheme or fiscal incentives. In that case, the people will increase their awareness, contributing to solving the puzzle.

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NOTES

(1) The disability measure is based on the Global Activity Limitation Indicator (GALI) question in the EU-SILC survey: "For at least the past six months, have you been hampered because of a health problem in activities people usually do? Yes, strongly limited / yes, limited / no, not limited".

(2) "Communities miss out on valuable voices and perspectives when people with disabilities and older adults are left out. They are deprived of co-workers, volunteers, mentors, and friends who offer new ways of thinking about, and navigating, the world. When older adults are excluded, communities lose wisdom collected over many decades, and their connection to history (https://acl.gov/about-community-living).

(3) "A serious financial education programme must have a long-term perspective – said Annamaria Lusardi during the meeting – but we must start our awareness-raising activities immediately so that those who have to make decisions on how to manage their income or assets will be aware that saving, investment, insurance and social security all play a major role in shaping their economic well-being now and in the future"

(4) In fact, under the German Civil Code, adult children are legally obligated to cover their parents' maintenance cost when they have exhausted their own financial resources.