

A review of issues in long-term care financing

Joan Costa-Font and Nilesh Raut
London School of Economics and Political Science (LSE)



Contents

1. Introduction

- 1.1 Motivation
- 1.2 Government Intervention in LTC
- 1.3 Heterogeneity
- 1.4 Study Objectives

2. Global funding mix of long terms care services and supports (LTCSS)

- 2.1 Mix of LTCSS financing sources in high income countries (HIC)
- 2.2 Mix of LTCSS in low- and middle-income countries (LMIC)
- 2.3 Implicit and explicit financing mix (partnerships)
- 2.4 Fiscal Sustainability
- 2.5 Political Economy and Financial Progressivity
- 2.6 Behavioral constraints to the expansion of long-term care programs

3. Datasets

- 3.1 Statistical office data
- 3.2 Country specific surveys

4. Trends in the supply, demand, and expenditures on long term care services and supports (LTCSS)

- 4.1 Ageing and the Demand for LTCSS
- 4.2 The Declining Supply of Informal Care
- 4.3 Unmet Needs and the Insufficiency of Market Mechanisms
- 4.4 LTC Expenditure Trends in HIC and LMIC
- 4.5 Limited Household Funding (Savings and borrowing)
- 4.6 Role of Technology and Telecare
- 4.7 Trends in Expenditure and use
- 4.8 Value of Informal Care

5. Limitations of Traditional Caregiving Models

- 5.1 Availability of informal care
- 5.2 Gender inequality
- 5.3 Older age preferences
- 5.4 Rising costs of care
- 5.5 Family organisation and delocalisation
- 5.6 The Catastrophic Nature of Long-Term Care Expense

6. Typologies of Long-Term Care Financing

- 6.1 Universal or Need Test based Models
 - 6.1.1 Social Insurance Models
 - 6.1.2 National and Local Tax funded models
- 6.2 Local Means Test based Models
- 6.3 Private Insurance Models
- 6.4 Reverse Mortgages
- 6.5 Intergenerational Transfers
- 6.6 Other Models

7. Policy Interventions across the world

- 7.1 Design of caregiving allowances
 - 7.1.1 Conditional
 - 7.1.2 Unconditional
- 7.2 Design of means testing and needs testing
- 7.3 Role of preferences and substitution
 - 7.3.1 Cash subsidies
 - 7.3.2 Care support
- 7.4 Cost-sharing designs
- 7.5 Integration and Coordination of health and social care
 - 7.5.1 Care Integration of services
 - 7.5.2 Coordination between financing streams
 - 7.5.3 Coordination between administrations and stakeholders
- 7.6 Quality and purchasing
 - 7.6.1 Evidence from COVID-19
 - 7.6.2 Purchasing models
- 7.7 Insurance designs
 - 7.7.1 New Care Insurance
 - 7.7.2 Extension of health insurance (Israel)
 - 7.7.3 Extensions of old age pensions
- 7.8 Paid Leaves

8. Conclusions

- 8.1 Summary
 - 8.2 Policy recommendations for low- and middle-income countries
 - 8.3 Limitations and need of further evidence
 - 8.3.1 Equity challenge
 - 8.3.2 Data quality
 - 8.3.3 Service transformation
 - 8.3.4 Social change
-

List of Tables and Figures

Executive Summary

This report examines the financing of long-term care globally, describes the challenges of long-term care funding in high as well as low- and middle-income countries. We depart what we mean by *long-term* care coverage, and how it varies at different levels of economic development, the role of informal care in satisfying care needs, and specifically the extent to which there is substitution between formal and informal care. Finally, we describe the main determinants of the demand for long term care (LTC) services and supports.

In section two, following a literature scoping review we provide an *overview of long-term care (LTC) funding across the world*, accounting for demographic (e.g., ageing) and socio-economic determinants (e.g., availability of informal caregivers and affordability of different systems), and specifically we distinguish between low-, middle- and middle-income countries. We provide an overview of the different systems of long-term care financing around the world using the conceptual framework of both ex-ante and ex-post forms of financing, and the role of *implicit and explicit partnership designs* and country specific financial arrangements which we define as ‘partnerships’, between key stakeholder such as the family and the community, the state and the market instruments.

A third section is devoted to the *sources of evidence* to learn about long term care arrangements, organization, and financing across the world. We describe the main datasets employs, mainly from different official sources, as well as country specific surveys.

Section four is devoted to identifying a set of *common trends* which suggest an excess demand of long-term care services for which many countries are globally unprepared to act upon. Such excess demand is driven by demographic and economic changes that give rise reduce the feasibility of traditional caregiving arrangements and call for the development of a network of services. Evidence on the expected *LTC demand and supply* is described from an analysis of existing microdata listed which will allow developing expenditure projections of need in different world countries, and we identify different measures of *unmet needs* which measure the extent to which the availability of informal care will be able to absorb such demand expansion.

Section five identifies some critical issues affecting the feasibility of the traditional model of caregiving, as well as issues that are important and where there are research gaps areas which influence the capacity of different long term care systems to finance different long term care arrangements. This includes an overview and assessment of the different reform scenarios of the different systems long term care systems in place to accommodate the estimated country-specific needs of long-term care services and supports.

Section six repots the typology of long-term care interventions across the world, and finally section seven describes a list of cross-country set of policy interventions to design long-term care systems across the world based on the country specific needs and the resources available to fulfil the needs of long-term care in countries that differ in their levels of economic development.

Finally, the report concludes with sections seven and eight which offer a conclusion section with policy implications and limitations.

1. INTRODUCTION

1.1 Motivation

Long-term care (LTC), also defined as long-term care services, and supports (LTCSS), refers to the ‘help needed to cope, and sometimes to survive, when physical and cognitive disabilities impair the ability to perform activities of daily living (ADL), such as eating, bathing, dressing, using toilet and walking’ (Grawoski, 2014). That is, it refers to services and supports provided to people with a reduced degree of functional capacity who need support in a residential setting or at home with their activities of daily living. The European Commission (2021) defines then as “*a range of services and assistance for people who, as a result of mental and/or physical frailty and/or disability over an extended period of time, depend on help with daily living activities and/or are in need of some permanent nursing care*”. They involve a range of services including medical and nursing care, personal care services, assistance services and social services that help people live independently or in residential settings when they can no longer carry out routine activities on their own (Barber et al, 2021).

Unlike health and disability programs which refer to working age population, LTC typically is consumed later in life, and it was provided by unpaid caregivers in the past, informally, and hence most social insurance schemes did not include them in their public health insurance systems and welfare states, as at the time most of care was provided informally, and it was a more residual need of a few individuals that managed to survive to a certain age. However, this was at the cost of a significant gender inequality, as women were the primary traditional caregivers, and care needs, were generally perceived to be a lower brother, a Cinderella service compared to health care, which relied less on technology and ore on unskilled labour. This explains that even to date, the financing of long-term care services involves significant cost sharing by users these data.

Another reason for limited LTC expansion is due to lower effective need as the average age of the population was lower and hence demand was more limited. However, population ageing is posing number of challenges to the system of LTC supports. Similarly, the increasing labour market participation of the traditional caregiver (Costa-Font and Vilaplana, 2022) reduced the availability of informal care in families, which calls for an additional source of rise in demand.

To date, we do not have a comprehensive study providing evidence of the rise in demand for long-term care worldwide, nor a framework to understand the different arrangements to finance long-term care, nor the reforms that are feasible in different countries according to their levels of unmet needs and economic development. This is the goal of this project. In European countries, long-term care spending as a share of GDP is expected to double in the next three decades due to an increasing formalization and the demise of traditional caregiving model (Costa-Font et al, 2015). However, the growing number of old people is posing a serious challenge to already insufficient health and care provisions in most of lower-middle income countries. According to projections for countries in the European Union, public LTC spending is estimated to increase from 1.6% to 2.2% of GDP between 2016 and 2040 (European Commission, Economic Policy Committee 2018) and to be 2.5% of GDP in 2050 (European Commission, 2021). In Australia, national government expenditure on aged care services accounts for 0.9% of GDP in 2014-15 and is projected to rise to at least 1.7% of

GDP by 2054-55. In contrast, in Asian countries in contrast, it is possible to identify a large number of government led interventions, yet it seems clear a large importance of the family in the form of filial piety, this is the case of China, Japan, Thailand and Malaysia, and in some countries like Singapore the role of the family has been embroiled by law, and in Korea, normed of the family caregiving duties are argued housing to crowd out an earlier development of a long term care system (Philips and Chan, 2002).

An increasing share of older adults are likely to need help once their functional status declines, which is different from having long term conditions. For instance, in the UK, a third of those with no Activities of Daily Living limitations have two or more long-term conditions (Raymond et al, 2021). Long term care refers to services to support older age populations in need of support, either in the form of informal arrangements to respond to such caregiving needs (which exhibit a reduction in their available supply), residential as well as different forms of home and community-based programmes that provide services and supports to individuals in need. However, the specific design of *long-term* care program might play different role at different levels of economic development, and more specifically the different variety of care *services and supports* available and that each population can afford and a suitable considering to local social norms of a community. For instance, even when we focus on Europe alone, public attitudes suggest that in some countries children are expected to take care of their parents, whilst in others the government is expected to do so (Eurobarometer, 2007). Hence, how different countries respond to the need of care depends on the intersection of the government role and its fiscal capacity (*government role in supporting and subsisting care*), social norms and expectation of family, especially children, spouse, and the wider community (*family and community*), and finally the development of the market for the provision and insurance of care services (*insurance and market for care services*).

1.2 Public intervention in long term care (LTC)

When the first health systems were set up back in the early and mid-20th century long term care was typically not part of the package of services offered. However, back then both social norms, and need of care was different as a smaller share of the population would make it to an age where an individual would be likely to suffer from some type of dependency. That said, population ageing and a change in social norms that led to the rebalance of gender household inequalities has expanded the demand for care and calls for a re-evaluation of the role of the public sector in ensuring the affordably and access to care. Governments invested in long-term care (LTC) to expand the access to care beyond what markets and society could extend it so to protect older persons against high out-of-pocket spending, and especially to provide some safety net to those who otherwise would go with unmet needs.

The development of publicly funded supports and subsidies for long term care generally pursues different goals, but in a first instance it aims at ensuring (i) the *affordability of care needs* (care costs can be catastrophic as we discuss below). Indeed, rates of personal bankruptcy are increasing more quickly for older adults than any other age group in the US (Li and White 2020). Another important goal is to ensure access to care and hence (ii) *reducing (or eliminate) the unmet needs* that arise in the absence among older age with disability in the absence of supports. In the 2019 47.2 % of European people aged 65 or over with severe difficulties in personal care or household activities reported that they had an unmet need for help in those activities (European Commission, 2021)

In addition to long term care needs can be driven to (iii) overcoming the emergence of *gender inequalities* that result from the provision of informal care the burden of which falls for the most part in women hands (though as we show such proportion vary by country). In 2019, 7.8 % of women aged 50-65 did not seek employment due to caring responsibilities, compared with 0.8 % of men (European Commission, 2021).

Other important reasons for government intervention include (iv) labour market *productivity losses* from reduction or labour market participation of caregivers supplying care to their family members, (v) the overutilisation of health care services due to *bed blocking and other health care use* (Costa-Font et al, 2018), as well as knock on effect in (vi) improving in *caregivers' wellbeing* (and subsequent health utilisation) of caregivers, as well as (vii) the *wellbeing and health of care receivers*.

The development of social protection for long term care has been progressively developed after the Netherlands set up a system in 1968, Israel in 1988, Austria in 1993, Germany in 1995 and reformed in 2008, and Luxembourg in 1999, Japan in 2000 and reformed in 2006, Scotland in 2002, Spain in 2007 and the subject to spending cuts in 2012 as well as the Netherlands which reform their long-term care system in 2015 among other. However, each country has adopted a specific system to be consistent with the health and other welfare institutions. However, most European countries have discussed and attempted to reform and rationalise their systems of long-term care subsidies and supports.

1.3 Heterogeneous needs

Nonetheless, long-term care coverage is not the same across different cultures and in different levels of economic development. One obvious reason is that the need of long-term care differs by population, which are in turn changing over time. Individual needs assessments are frequently used to determine access to social protection coverage for long-term care. These assessments typically consider the presence and severity of difficulties with ADLs/IADLs, as well as cognitive and/or other limitations.

In England, in the last decade there has been an increase in the share of older age population that can live an independent live, yet those with severe need of support increased too. Indeed, the share of those aged 80–84 with no ADL limitations rising from 68% in 2006 to 75% in 2018. However, those with two or more conditions increased from 30% in 2006 to 38% in 2015 (Raymond et al, 2021). Yet, besides differences in need, caregiving is normally a unique response to the social needs of individuals which differ in expectations. Specifically, different cultures exhibit different preferences with regards to the role of informal care in satisfying care needs, and specifically the substitution between formal and informal care at old age. This is especially remarkable in the influence the demand for long term care (LTC) services and supports. Japan, Italy, and Spain, which have the highest proportion of the elderly population among OECD member countries, Korea is expected to overtake Italy, the third highest in the OECD, in 2036 with the fastest rise in the aging rate. According to the OECD, from 1970 to 2018, the average annual increase in Korea's aging rate was 3.3%, the fastest among 37 OECD countries (OECD, 2021). The delineation of entitlements to public subsidies for LTC services has proven arduous and has resulted from a lengthy process in many European countries. This is especially the case in countries that, though at different time periods, have universalised the access to LTC such as Netherlands (which was the first country to universalise access to care in 1969), Germany (which established a social

insurance scheme in 1994) and Spain (which developed a universal tax funded system in 2007). In characterising the models of care, one can distinguish two drivers of universalisation, namely (1) support for female labour market participation in Northern European countries and (2) support for struggling families, mainly in Southern European countries.

Nonetheless, the circumstances are different in the low- and middle-income countries. Owing to a decline in fertility rates and an increase in life expectancy, the low- and middle- income countries such as India, China, South Africa, Thailand, and other emerging economies now have a significantly growing proportion of the aging population (Bloom and Eggleston, 2014). The recent projections by United Nation's report on world population aging suggest that, in the next three decades, the number of older people (age 65 and above) globally would grow from 703 million in 2019 to 1.5 billion individuals in 2050 (UN World Population Aging Report, 2019). Perhaps the largest increase in older people is likely to occur in Eastern and South-Eastern regions of Asia. The projected figures indicate that South and East Asia put together will house more than half (+800 million persons) of all older people in 2050 (World Population Prospects, 2019). Especially, every fourth person in China and every fifth person in India can be expected to be aged 65 or older in 2050. This is particularly a rising concern because these countries, compared to Europe and North America, are new to such a level of demographic transition and the lack of facilities and infrastructure needed to ensure healthy aging can potentially make the situation worse. In addition, such a transition can come at the cost of enormous psychological burden. The drastic changes in the demography of these lower-middle income economies pose the greatest threat in terms of healthy aging as it is expected to shoot up the demand of long-term care, mental support, healthcare services, and aging related facilities and infrastructure.

1.4 Study Objectives

This report provides an overview of the global financing of long-term care (LTC), drawing on the evidence of the last two decades. It builds upon a previous report published by the WHO provides evidence of a rise in the demand for long-term care (WHO, 2007) and examines the constraints both social and financial that explain the organisation of different caregiving arrangements. We provide a framework to classify different LTC systems and we discuss the role of the main challenges to the current system of care, namely the role of caregiver's labour market participation of the traditional caregiver, namely a middle-aged woman (Costa-Font and Vilaplana, 2022), as well as both individual and public affordability. For instance, the employment rate of women increased from 67.8 % in 2010 to 73.1 % in 2019 (European Commission, 2021). The latter results from the increasing demand that results from an ageing population and changing social values and improvements in gender equality. We examine the main drivers of long-term care expenditure growth.

To provide overview of the existing heterogeneity in the organization of LTC across the world, we depart of the role of LTC in relieving older age population from the endemic problem of unmet needs and the unaffordability of care, relieving families and specifically women, from the wellbeing burden of providing care with limited support, as well as the health system (Costa-Font et al, 2018) and other social services from the spill-over effects of limited supply of care, including bed blocking.

The analysis of financing systems will draw on Costa-Font et al. (2015) where we classify different financial instruments in terms of ex-ante (before the need arises) and ex-post (after

the need arises) and, we conceptualise policy as resulting from financial arrangements following the notion of either implicit (silent) or explicit partnerships between the three main agents contribution to the financing of the system, namely individuals cost-sharing, family supply of care, government subsidisation and, finally, insurance and other market arrangements (Costa-Font and Zigante, 2020).

This report combines mixed methods of documentary analysis where published evidence in the academic and policy literature to examine how long-term care is organised and finances in different countries, and what are the main features of different countries provision and financing of long-term care. We have carried out a non -exhaustive literature review of published evidence, to distil the main notions and ideas that we believe are important to guide policy making.

To understand the demand for care and the financing needs of the world, we will carry out a statistical analysis of caregiving arrangements and expenditures in different countries. We provide descriptive statistical analysis of trends as well as panel data regressions will allow us to estimate the predicted use of care and its determinants. Drawing on estimates on the costs of care per hour in different countries, we will provide an estimate of the demand and the expected rise in long-term care expenditures in several countries.

The rest of the report will discuss the global funding of long-term care, followed by a description of the datasets used. Next, we report evidence of global trends retrieved from several data sources and countries, followed by a discussion of the limitation of the current caregiving model, a classification and description of the different sources of LTC funding followed by a discussion of the main policy interventions around the world. A concluding section will include some lessons that can be learned from the existing evidence and some tentative policy reforms.

2. THE GLOBAL FUNDING OF LONG-TERM CARE (LTC)

This section describes the different systems of long-term care financing around the world using frameworks developed in Costa-Font et al (2015) and the classification of long-term care systems will include structural determinants such as the preference for cash or in-kind supports, its funding based on ex-ante or ex-post approaches (e.g., funding by taxes, social insurance, private insurance and family), as well as the design of a co-payments, means and needs tests and the catastrophic nature of care covered. The evidence draws on documentary analysis of available reports and emerging literature in long-term care financing.

2.1 Mix of LTCSS financing sources in high income countries (HIC)

Public social protection systems would typically provide coverage on average to 60% of the total costs of LTC services for people with moderate needs – requiring 22.5 hours of care per week (OECD, 2020). Across 26 countries and subnational areas in the OECD and the European Union (EU), the reported total costs of LTC range between one-half and *five times the median disposable income* of individuals of retirement age or older (OECD, 2020). Hence, for many people with moderate and severe needs, paying for long term care is a concern, whereas in some cases it can be an important catastrophic expense that requires social assistance of family or state. Long term care is a contingency that has not been highly insured compared to other shocks affecting household expenditures. Indeed, the principle 18 of the European Pillar of Social Rights¹ stresses that everyone has the right to affordable

long-term care services of good quality, in particular homecare and community-based services. In the European Union, 75 % of older people with any level of long-term care needs (low, moderate, or severe) would be below the poverty line (after paying for long-term care and before other expenditure) if they purchased homecare services at full cost from their income alone (European Commission, 2021).

To date, informal care is main source of care in most higher income countries, let alone lower income countries. About 12-18% of the EU population aged 18-75 provide informal long-term care at least once per week (European Commission, 2021). However, it is notable an *increasing formalization caregiving services, in part due to the limited support within families (driven by the employment status of the traditional caregiver, alongside distance to care receivers which limits the availability of care supply* (Grabowski, 2014; Narayana, 2010). Such socio-economic changes have led to a reshape of the traditional caregiving arrangements as discussed in section 5, leading to the rise in demand for long-term care. However, the transition from a system of care arrangements based on informal care to the one based on formal care depends on the (i) substitution between formal and informal care, and (ii) the availability of informal care, which is influenced by employment patterns of the traditional caregivers and especially the (iii) affordability of formal care services in different countries. Evidence from Eurostat (2018) suggests a significant decline in the ratio of working age individual per carer from 5.8 in 2020, to 2.9 in 2040. More than one-third of households in the EU that require long-term care but do not use (more) professional homecare services do so for financial reasons. In five Member States, the proportion is even higher than 50% (European Commission, 2021). The latter is a feature where governments can play an important role to correct potential inequalities in the availability of care and in the subsequent presence of unmet needs. Indeed, individual income is a significant predictor of an individual's reception of formal care in Italy and in Germany (Albertini et al. 2017), although the latter is not true for France, Denmark and (Albertini and Pavolini. 2017, Bakx et al. 2015).

Given such needs, the ageing patterns and the availability of informal care are far from homogeneous across the world, different solutions likely emerge depending on the heterogeneity in the access to informal care, the sector development, the individual affordability, and the government's fiscal capacity. In the European Union, individuals in the first (lowest) income quintile were 37.2 percent more likely than those in the highest income quintile to require long-term care (22.4 percent) (European Commission, 2021).

This study is designed to identify the needs, caregiving supply and financial arrangements to fund long-term care (LTC) financing for older adults in several world countries across the socioeconomic spectrum. Whilst a few higher-income countries have well-developed systems of long-term care these are not without limitations and almost none offer full financing of caregiving needs. Yet, most countries worldwide, including lower-middle-income countries, do not even have a network of specialised LTC services in place, thus disabled individuals in need of care rely heavily on family members or friends for receiving long-term care.

Even when LTC services are available and affordable, it's a type of care that has been traditionally less subsidised compared to other welfare services in most European countries, in part because the financial coverage for LTC was formalised later than other social services. Although austerity policies after the Great Recession have constrained the expansion of public sector involvement, LTC reforms have been implemented in the form of public

subsidies to either increase the access to nursing home and home care or, to provide care recipients and their families with the means to sort their caregiving needs using private or informal sources. In addition to European countries, other countries such as Japan have introduced a mandatory LTC insurance with universal coverage to socialise the responsibility of long-term care (LTC) of old persons.

One of the problems associated with access is the soc-called ‘Mathew effect’, whereby more vulnerable individuals, and hence less literature typically face the largest barrier in accessing long term care. Access to care typically implies institutional knowledge and compliance with bureaucratic procedures, yet not all individuals are equally skilled at facing.

2.2 Mix of LTCSS in low- and middle-income countries (LMIC)

Most of low- and middle-income countries historically relied on traditional pattern of caregiving based on *Filial Piety*, which relies on the family altruism that promotes the culture of respect and care for elderly parents or grandparents. Thus, majority of these countries lack the formal infrastructure required for long-term care support and services. In this report, we discuss, in detail, the case for India and China as these two countries constitute a third of global population and are likely to host close to half of world’s elderly population by 2050.

2.2.1 China

China is moving towards becoming an aging society. Although the rate of ageing is lower when compared with Northern American and Western European countries, China is home to majority of worlds’ elderly population. As per the National Census of China, the proportion of elderly individuals aged 65 and above increased from 5.5% to 13.5% between 1982 and 2020 ([National Bureau of Statistics. PRC 2021](#)). Presently, China hosts around 191 million elderly people aged 65 and above.

This massive increase in the population of elderly can be attributed, among other reasons, to its one child per couple policy (OCP) introduced in 1979. This policy changed the structure of the Chinese population to a unique structure of 4-2-1 (four grandparents – 2 parents – 1 children) for bulk of families ([Flaherty et al 2007](#)). The 4-2-1 structure is not a sustainable model when looked through the lens of caregiving. To be an average caregiver in China, a single child alone may have to bear the burden of many people in the family. [Wang et al \(2020\)](#) observe that adult daughters-in laws provide comparatively more care (both low and high intensity informal care) than daughters do in rural regions of China. This is because daughters-in laws care not only for their parents-in law but also their own parents at the same time ([Wang et al 2020](#)). However, for the rest of the world that does not follow 4-2-1 family structure, the average burden of caregiver is comparatively much smaller.

Historically, Chinese society developed and maintained the culture of respect and care towards the older parents also known as *filial piety*. It led to the high prevalence of family level informal caregiving in China. The family caregiving can be divided into two roles, caring for older parents, and caring for grandchildren. Grandparents help adult children, by taking care of grandchildren, in return of mental, physical, and financial support from adult children whenever needed ([Wu and Li 2004](#)). The presence of filial piety in traditional societies remained so efficient and sustainable that the governments hardly felt a need to reform the welfare and support programs for elderly population ([Serrano et al. 2017](#)).

However, things started to shift when economic activity in China increased drastically in the last 4 decades. China took two major initiatives which changed it significantly viz. Economic reform of 1978 and Population policy reform of 1979. China's transition from a welfare state to market economy paved a way for social and economic reform in the country through the liberalization of its economy. The post-reform era brought economic prosperity that dramatically reduced the poverty. Nevertheless, the reform reduced the number of jobs available in rural area leading to mass migration of rural population to urban areas (de Brauw et al 2002, Connelly et al 2021). The migration of population from rural to urban areas, dominated by male population, searching for better opportunities to support their families back in villages, shifted the burden associated with caregiving to women, who stay behind in villages. Additionally, the population policy reform, introducing one child policy changed the population structure of the country to the unique 4-2-1 family structures, led to reduction in the overall number of informal caregivers in the country. Thus, China faces an enormous caregiving crisis due to decline in *filial piety* and lack of alternate infrastructure to meet the ever-increasing demand for caregiving due to its continuously aging population.

To curb this crisis, China introduced a controversial Filial Piety Law 2013 (Protection of the Rights and Interests of Elderly People), which makes it mandatory for adults to provide traditionally expected care and financial support to their elderly parents (age 60 and above), including frequent visits. However, the law is hardly helping to mitigate the situation as it does not have a defined punishment at place, making it difficult to enforce it widely (XinQi Dong 2016). Perhaps the strict enforcement of such laws may leverage the existing social problem of gender gap in caregiving. Approximately, 70% of caregiving for elderly is provided by women, more specifically daughters-in-law as they not only care for their parents-in-laws but also their own parents (Pearson KC 2005, Serrano et al 2017). Therefore, the strict enforcement of such laws is expected to increase the risk for women being forced out of labor force to become informal caregivers for their elderly parents and in-laws (Serrano et al 2017; Connelly et al 2018).

In response to the presence of unmet needs for LTC, the pilot social long-term care insurance (LTCI) was launched in 2016. Currently, 27 out of 31 provincial administrative units in mainland China have at least one pilot city. The main goal of LTCI is to improve the access of disabled people to LTC and alleviate the caregiving burdens of family members. The pilot LTCI has four distinctive features. First, LTCI enrolment is linked to the types of social medical insurances. All the LTCI schemes include the insured of Urban Employee Basic Medical Insurance (UEBMI, for urban employees and retirees) and only a small proportion additionally include the insured of Urban Resident Basic Medical Insurance (URBMI, for urban non-employed and self-employed individuals) and New Rural Cooperative Medical Scheme (NRCMS, for rural residents) (Fang et al., 2019). Second, during the pilot stage, the scheme heavily relies on financial support from social medical insurance, and the contribution of individual participants and employers is low. According to the statistics from China National Healthcare Security Administration, in 2018, around 80% of LTCI funds came from social medical insurance. Third, LTCI schemes usually cover home care and institutional care provided by medical (e.g., hospitals) and residential care facilities; several schemes also provide cash subsidies to informal caregivers. In the next decades, developing countries will be the main force of global population ageing (United Nations, 2019) and thus we need more evidence from developing countries like China.

Based on international experience, the introduction of social LTCI might bring a reduction in medical utilization and expenditure. Choi et al. (2018) found that, in South Korea, the number of hospitalizations, the length of stay, and the burden of medical costs of LTCI beneficiaries

significantly decreased compared with their counterparts during 2005-2013. Most studies reported consistent results (Kim et al., 2013; Kim & Lim, 2015; Sato et al., 2006). Additionally, in countries without social LTCI, increasing the availability of publicly funded institutional care and home care and subsidizing informal caregivers are associated with lower medical service use including hospital admission and emergency care (Costa-Font et al., 2018; Rapp et al., 2015).

2.2.2 India

India observed a reduction in the fertility rate from 4.8% in 1980 to 2.3% in 2012 (The World Bank, 2017). Housing more than a sixth of the global population, the population (60+) in India is expected to grow from the present value of 9% to 18% in 2050 (Bloom and Eggleston, 2014). In the past, children used to provide care for their elderly parents and the government had less or no formal role in caregiving (Norton, 2016). It is reported that elderly people in India prefer home care over institutional care and rely heavily on their children for care (Alam et al., 2012). Traditionally, the supply of informal care was regarded as a female activity in which daughters provided most of the care (Ajay et al., 2017; Bettio and Verashchagina, 2009; Brinda et al., 2014; Carmichael and Charles, 2003; Norton, 2016; Rodrigues and Nies, 2013). Data from 2020 suggests that 16% of women in the urban parts of India were formally employed, compared with 57% of men (Plackett, 2022). This is reflecting an extreme form of familism where older people in India express a strong preference for living with their extended family, and about 80% who live with their family are satisfied with their living arrangements compared with 53% who live alone (Plackett, 2022).

In recent decades, India as an emerging economy strongly indicated its presence in the global economic environment (Kalirajan and Singh, 2010; Khan and Chowdhury, 2013). As a result of past developments, it experienced an incredible improvement in the standard of living, the rise of the middle class, and the emergence of big cities (Grabowski, 2014; Narayana, 2010). This event led to the emergence of service sector jobs such as information technology and knowledge processing jobs where women participate in great numbers and to the increase in the percentage of nuclear families in cities.

However, such economic developments can affect traditional caregiving patterns in the country. This can be explained through the following mechanisms: a shrinking family size, a rise of female labor participation, a migration of manpower to cities, fewer children looking-after parents, and a rise in intergenerational spacing because of late marriages are the main reasons for the declining number of caregivers in the emerging economies (Bloom and Eggleston, 2014; Grabowski, 2014). The migration of young labor force into cities transforms villages and small towns into a place of old people. Approximately 73% of elderly individuals live in rural India (Census of India, 2011). The percentage of elderly needing some or other form of care for performing activities of daily living (ADLs) is found to be greater among rural residents (7.9%) as compared to urban residents (6.9%) (Ajay et al., 2017; Alam et al., 2012).

Female Employment in India: It was reported that the majority of caregivers (>80%) in India are females (Ajay et al., 2017; Brinda et al., 2014). Thus, an increase in female labor participation can significantly affect the likelihood of caregiving in India.

The post-trade liberalization era of the Indian economy is composed of GDP growth rate of over 5.5%, increased labor productivity, and a stable unemployment rate (<5%) (Dasgupta et al., 2018). As reflected in Fig. (III), the female labor force participation rate (LFPR) steadily increased during the same time until 2005 (ILO, 2016). The urban female LFPR is expected to approach the international level of 50 to 60% by 2025 (Bhalla and Kaur,

2011). Most importantly, India's female LFPR follows a 'U-shaped' pattern (Goldin, 1994; Mammen and Paxson, 2000). Thus, the low level of income is associated with higher female LFPR to meet the standard household consumption level. The same female LFPR decreases for the middle-income category women and increases further for women belonging to high-income category (Goldin, 1994; Klaassen and Peter, 2015; Mammen and Paxson, 2000). However, the female LFPR started to decline after 2005 and continued thereafter. This decline is attributed to various reasons including the U-shaped characteristic of female LFPR in India (Chowdhury, 2011; Goldin, 1994; Kannan and Raveendran, 2012; Mammen and Paxson, 2000; Rangrajan et al., 2011), the large female LFPR gap between rural and urban India (Bhalla and Kaur, 2011; ILO, 2016), the social and cultural obstacles due to patriarchal dominance in India that influence the work choices (Chowdhury, 2011; Neff et al., 2012; Olsen, 2006), and the average wages at a district level between 2005 and 2012 (Chatterjee et al., 2015).

In India, the agricultural sector still dominates in terms of women employment even after a steady decline in its share and the growth of other sectors including the construction sector and the service sector in India (Dasgupta et al., 2018; Lahoti and Swaminathan, 2013).

Figure 2.1 indicates that India's female participation rate in service sector jobs exceeds the overall labour participation rate after 2013 and continues to rise, whereas overall labour participation rate continues to decline post 2013 (ILO 2021). Agricultural jobs are usually concentrated in rural setting, whereas service sector industry is more dominant in urban setting. The rise in service sector is evidence that India's young and adult females migrate to Indian cities for better paying opportunities. This migration of females into cities is causing decrease in informal provisions in villages and small towns of the country, thus increasing unmet needs for people in need of long-term care.

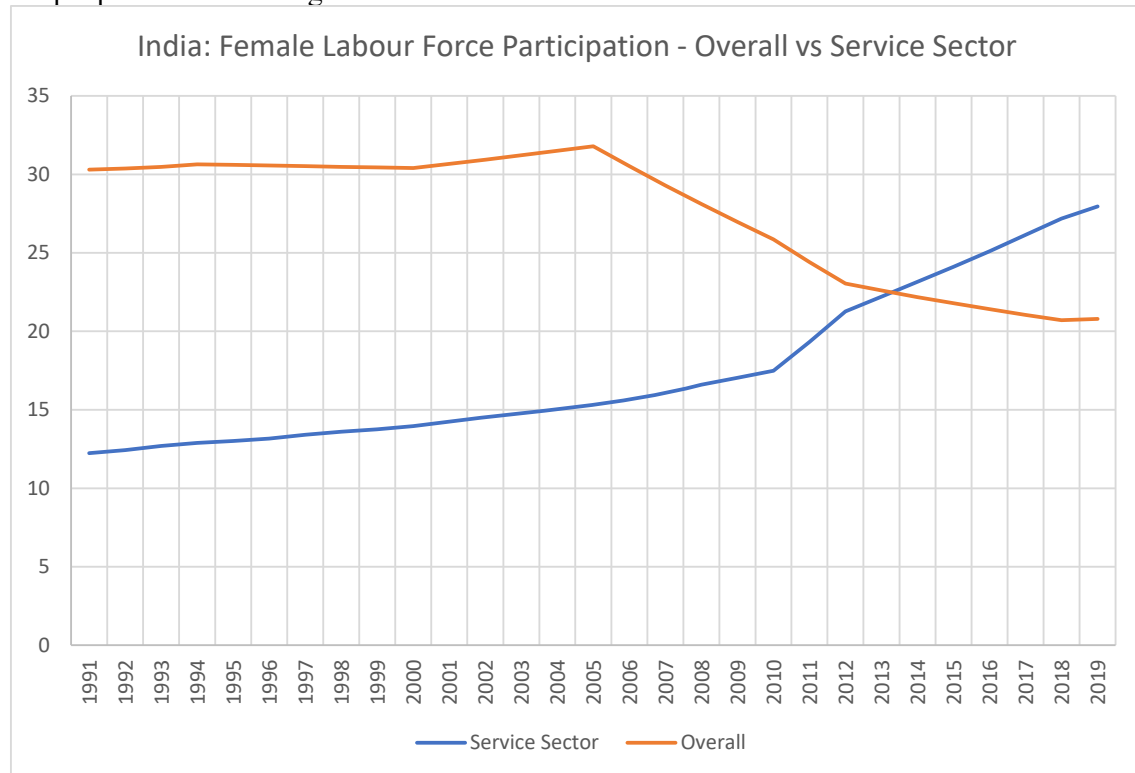


Figure 2.1: Comparison of India's female labour participation rate, overall vs service sector (ILO 2021).

2.3 Implicit and explicit financing mix (partnerships)

A way to conceptualise the financing of long-term care is on the one hand whether the financial scheme is incepted before the need of care or after. Indeed, on [Costa-Font et al \(2015\)](#) distinguish *ex-ante* (before care needs take place such as insurance, savings, and prevention grounded models) and *ex-post* (family and state bailout) forms of financing, and the role of implicit and explicit partnership designs. Another distinction is whether the role of the government is defined explicitly or not. Costa and Zigante (2020) define the notion of an 'implicit partnership' refers to implied financial agreement involving the co-participation of public stakeholders (central, regional, or local), in addition to, or conditional upon, contributions of private stakeholders such as users, relatives or the community. Contributions can be in the form of time devoted to informal care (and hence not to producing rents from employment) or monetary contributions, such as users' fees or cost sharing (co-payments or deductible) to pay for personal care. Finally, we show that the financing mix is far from stable over time and, typically, require adjustments to changing circumstances. Some countries consistently redefine their financing mix or partnership terms (the 'implicit contract') over time. The IP concept allows us to interpret differences in LTC financial entitlements across European countries. [Costa-Font and Zigante \(2020\)](#) distinguish two types of IPs: 'implicit user partnerships,' in which the policy focus is on cost sharing of formal services, primarily home care, and 'implicit caregiver partnerships,' in which the policy focus is on incentivizing and supporting informal care provision through cash-for-care schemes, which entail a high reliance on cash benefits as a means of sustaining or expanding LTC financing coverage. The concept of implicit partnership (IP) is especially useful for comprehending public financing of LTC. It is interesting in representation in social policy formulation). However, such an arrangement has a similar effect. The concept of implicit partnership (IP) is especially useful for comprehending public financing of LTC. IP are an alternative to funding models such as 'explicit (financial) partnerships,' which are common in the United States. Its origins can be traced back to the application of the concept of implicit contracts to long-term care. When a contract does not specify the co-financing of care before the need arises, it is considered implicit (mainly because of limitations of interest representation in social policy making). However, such an arrangement has the same effect as an explicit contract.

This entails utilising various forms of cost sharing (e.g., co-payments), but unlike explicit partnerships, individuals cannot pre-determine the extent of public co-financing. An 'explicit partnership (EP)', on the other hand, refers to an explicit (and thus formalised) version of an IP, namely an agreement that specifies the stakeholder's contributions to newly funded care costs *ex ante* with the guarantee that the public sector will cover the remaining costs. Although there are no precedents for intellectual property in Europe, some have been discussed in many countries, including the Royal Commissions for Long-Term Care Reform in England ([Wanless and Forder 2006](#)) and in France as discussed in [Doty et al. \(2015\)](#). An explicit public/private partnership in LTC was debated in France, but no progress has been made, and there appears to be little political interest. The main benefits of EP designs are that they are transparent and make the relative financial responsibility of the user and the state clear. That is, it specifies the expected contribution from individuals to the financing of LTC. Such anticipated contributions can be direct (user fees) or indirect (via the possible intermediation of private insurance mechanisms).

In the United States, Medicaid is the primary source of funding for long-term care ([Bergquist et al. 2015](#)). The functional status, income, and financial assets of a person determine eligibility for Medicaid LTSS. Supplemental Protection Income recipients who meet the requirements for age and function are automatically eligible for full LTSS and other

Medicaid benefits (i.e., an income equivalent to 74 percent of the federal poverty level). States also provide LTSS to others through "pathways" of eligibility based on medical need and income. Medical expenses incurred from income may be deducted (spent down) to meet income eligibility requirements under the Medically Needy pathway. Initially, care was intended to be provided in a nursing home, but home and community health services have been developed and are now the primary source of Medicaid-funded care. Similarly, the Veteran Administration provided LTC to people who had reached a certain level of disability. The private LTCI market in the United States has remained stagnant due to a variety of factors, including high premiums (due to a high loading factor), low purchase rates, and high rates of medical underwriting.

2.4 Fiscal Sustainability

Japan is one of the countries facing the most difficult fiscal challenges. Health and LTC expenditures account for 10.9 percent of GDP, ranking sixth among OECD countries (OECD 2019). The number of people 65 and older is growing, while the working-age population is shrinking. Because of the greater impact of population ageing, LTCI expenditures have increased 1.5 times faster than SHI. These trends are unlikely to change.

Increasing the proportion of public expenditures paid by elders would not be a practical solution because their income is typically low and limited to public pensions. However, what are the implications of future ageing and slow economic development, the economic burden of a smaller population of young adults, and arguments to improve or reform LTC systems for the long term? This is the case when universal coverage defines some kind of entitlement, which is a much more expensive alternative (Lave 1985). However, this characterisation often ignores that in some areas such as long-term care, where there are significant pressures to shift the demand for care, the unsatisfied demand is continuously expanding, and countries define partial entitlements where reform-increasing subsidies come together with significant user co-participation or contribution.

The underdeveloped state of LTC coverage in many European countries makes financial sustainability an important concern to weigh against the increasing demand for LTC, underpinned by the loosening of family ties (Costa-Font 2010). Consistently, an emphasis on financial sustainability has led to a Europe-wide policy approach of limiting the expansion of residential care and instead favouring home-based care, including incentives for family involvement in the provision and organisation of care.

2.5 Political Economy and Equity in Finance

Support for long term care reports are often the results of political alliances that differ in their goals of but are attracted by support of older age electorates. Increasingly, reforms that expand support of long-term care system are driven by the so called 'greying' of the median voter. This means that political competition entails the proposal of new health care entitlements. One of the constraints to expanding supports is raising fiscal pressures. This explains that typically, public support is larger in highly visible and less costly types of care than for residential care or supports that simply redistribute resources between people in need of care and without care needs. Indeed, in the European Union, the proportion of publicly provided or funded home care varies between 132 percent in the Netherlands and 3 percent in Portugal, with the EU-27 average standing at 31 percent. In comparison, such an average is

much lower for residential care coverage, which is only 19%, and 46 percent for cash benefits (European Commission, 2021).

The financing of long-term care might disproportionately fall in different hands depending on the financial mechanism in place. Some evidence documents that higher income individuals are less likely to support social insurance and redistributive proposal in Spain (Costa-Font et al, 2008). However, the proliferation of evidence suggesting effect of supports on caregivers and the health system might increase support of groups that do not directly benefit from long term care services too. That said, the fragmentation of long-term care systems in different Member States, limits the comparability of evidence, and hence more generally the extent to which one can compare evidence, and engage in policy imitation and transfer.

2.6 Behavioural constraints to the expansion of long-term care programs

Public insurance expansion is likewise constrained by individuals' myopia with respect to the risk of needing LTC when making electoral choices. Such cognitive biases include some degree of risk denial, and a disinterest in the importance of LTC reform and the appropriate level of expenditure relative to other social expenditures (OECD, 2011). Hence, ultimately the expansion of LTC entitlements has become a political decision driven by the willingness of citizens (potential future users) to direct tax revenues towards LTC.

Decision-making regarding LTCI is unique among a number of dimensions. First, insurance decisions are largely state dependent and emotional (due to the loss of independence in the event of disability and the role of family in care of older adults). Second, individuals are not always well equipped to assess their risk of disability, let alone its duration (Kunreuther et al, 2002), and face limited experience in making similar insurance choices unless they were involved in a family member's arrangements (Coe et al, 2015). Third, although family norms with regards to intergenerational caregiving obligations might have changed over time, individual's behaviours might still be grounded on traditional default social norms, and hence their insurance decisions can be affected by inertia. Finally, insurance products are often complex and thus hard to understand, and they entail facing significant costs to protect against risks that are primarily 30 to 40 years off. Such choices are vulnerable to present bias and prone to procrastination as they are fewer pressing decisions relative to other demands.

Individuals in planning old age might be anchored in the present *frame of 'no disability'*. Among the main problems associated with decision with regards to old age lies the fact that *ageing is negatively framed*, hence, individuals provide lower weight to wellbeing at old age earlier in their life's. Old age is typically associated with being 'closer to death', a time that one lives with one or several co-morbidities and more generally where individuals have limited capacity to contribute to the labour market, and hence be productive in the traditional social investment approach. For instance, the need of long-term care is framed generally in a 'loss domain' (Hsu et al 2008). Caregiving decisions are more often than not reflective of inertia and a large choice set might create decision fatigue and instead, individuals use decision making shortcuts that imply less effort. Individuals err in their hedonic forecasting of old age in part due to the negative framing associated with old age. Anchoring decisions in relatives, might be an explanation for some natural nudges playing a role against providing a more positive frame for old age. Finally, individuals present biasness, entails that individual tend to prioritise current losses more than future losses. There is always an expectation of a future bailout, especially when the complexity of decision affecting old age needs makes people turn to avoid coming out with a decision.

The role of social norms is reflected in the famous quote when it comes to thinking about long term care is that “the best long-term care insurance is a conscientious daughter” (Bott et al, 2017). Similarly, bequest motives, or a person’s desire to leave assets to loved ones and not spend his or her entire estate on long-term care (Lokwood, 2010). Sloan and Norton (1997) found no descriptive evidence of bequests motives (though they might play on gifts)

People are willing to pay more to avoid institutionalisation than they would pay for home health care supporting a minor care need, reflecting their deeply held avoidance of institution (Costa-Font, 2016). When people do move from home to an LTC institutional facility, they often experience the move as a highly stressful and emotionally disruptive event. They specifically express distress around the perceived inevitability of the move, the lack of agency involved in the decision, the abruptness of the move, the threat to their identity, and the disruption of their social network. Accordingly, *institutionalization aversion* refers to the fact that 30% people that prefer death than moving into nursing home (Mattimore et al, 1997) and it is estimated at 16% of individuals income (Costa-Font, 2016).

3. DATASETS

3.1 Statistical office data

We draw on general statistical records from the WHO, OECD, and country specific statistical offices. For middle and lower-income countries, we plan to use data from the study conducted by the World Health Organization (WHO) on global ageing and adult health. The WHO’s Study on Global Ageing and Adult Health (SAGE) is a longitudinal study that collects data on the older population (50+) along with a small comparative sample of adults aged between 18 and 49 years (WHO, 2017). It is a multi-country study on global ageing conducted in major emerging economies via China, India, South Africa, Mexico, Ghana, and Russian Federation. So far, the implementation of three waves of SAGE is completed, namely Wave 0 (2002-2004), Wave 1 (2007-2010), and Wave 2 (2014-2015) (WHO, 2017). The Wave 0 of SAGE is a baseline data which was recorded as a part of the World Health Survey (WHS) conducted by WHO in 2002-2004 (WHO, 2017). The SAGE data records information related to health status, health behaviour, healthcare access, and health conditions of the adult members of the households (WHO, 2017). It also collects information about self-reported socio-demographics.

For higher-income countries, we attempt to examine the needs of long-term care in a number of countries covered in the survey which include several European countries, the United States and six middle-income countries. The datasets allow identifying how the use of informal care, unmet needs, and the use of different types of formal care varies by age and gender. The research team has already access to the datasets. The sample employed is widely used in previous research and covers representative samples of the countries examined. Its validity is widely recognized by its use in research.

3.2 Country specific surveys

We employ the following survey datasets from a number of different countries. Although the question might differ, they offer equivalent or standardised information that is adapted to each country’s context.

Table 1: Potential Datasets to be Used (N=24)
High Income Category
The Survey of Health, Ageing and Retirement in Europe (SHARE) The English Longitudinal Study of Ageing (ELSA) US Health and Retirement Study (HRS) US National Health and Aging Trends Study (NHATS) Social Environment and Biomarkers of Aging Study (SEBAS) - Taiwan
Upper Middle-Income Category
Survey on Health, Well-Being and Aging in Latin America and the Caribbean (SABE) • Argentina SABE • Cuba SABE • Uruguay SABE • Brazil SABE • Chile SABE Mexico - The Mexican Health and Aging Study (MHAS) Mexico - WHO/SAGE Costa Rican Longevity and Healthy Aging Study (CRELES) - Costa Rica Puerto Rican Elderly: Health Conditions (PREHCO) - Puerto Rico South Africa - WHO/SAGE Russian Federation - WHO/SAGE
Lower-Middle-Income Category
China - Chinese Longitudinal Healthy Longevity Survey (CLHLS) China - WHO/SAGE India - WHO/SAGE India - Longitudinal Ageing Study in India (LASI) Indonesia - Indonesia Family Life Survey (IFLS)
Low-Income Category
Bangladesh - Matlab Health and Socio-Economic Survey (MHSS) Ghana - WHO/SAGE

- a. WHO SAGE is part of an ongoing program of work to compile comprehensive longitudinal information on the health and well-being of adult populations and the ageing process.
- b. SHARE provides individual data of older age people in Europe.

- c. The Health and Retirement Study contains four decades worth of individual data of older populations in the United States.
- d. ELSA contain three decades worth of individual data of older populations in England.

4 TRENDS DEMAND AND SUPPLY OF CARE AND EXPENDITURES

4.1 Ageing and the Demand for LTC

Ageing: OECD Countries

Figure 4.1 and 4.2 represents the trends of aging population, in the past decade, for both OECD and non-OECD countries. The proportions of elderly in the OECD countries are much higher compared to non-OECD countries. Overall, we observe that the average age of the population aged 65 and above increases continuously for both OECD and non-OECD countries, whereas the rate of increase is slower for some countries and faster for others.

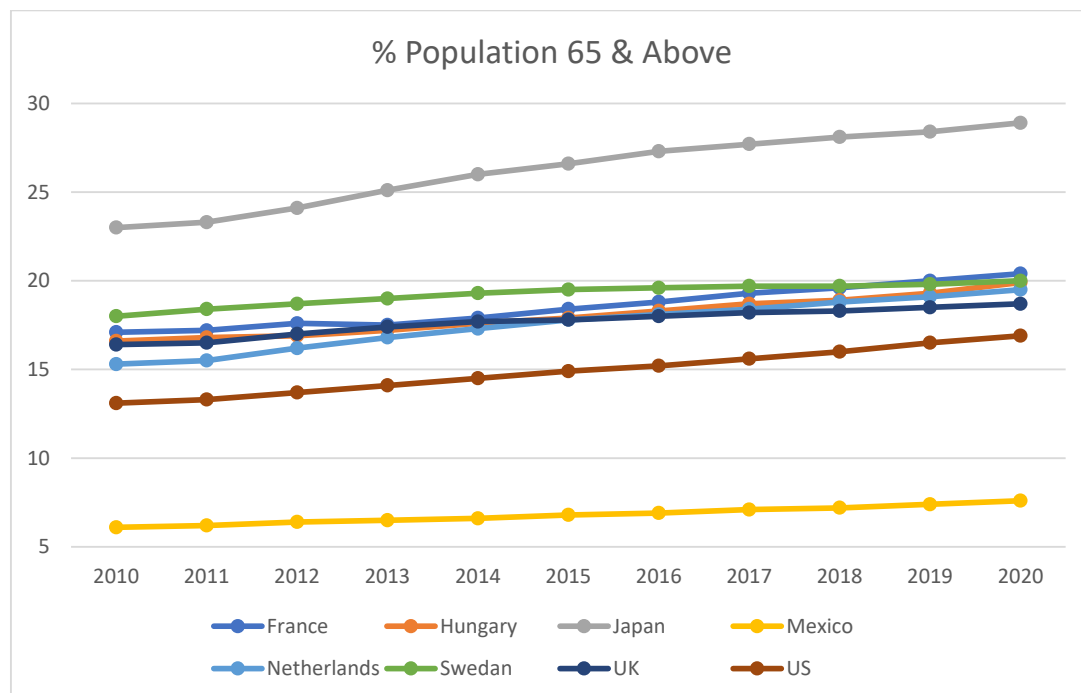


Figure 4.1: Percentage of population aged 65 and above for member OECD countries (OECD 2021).

Ageing: Non-OECD Countries

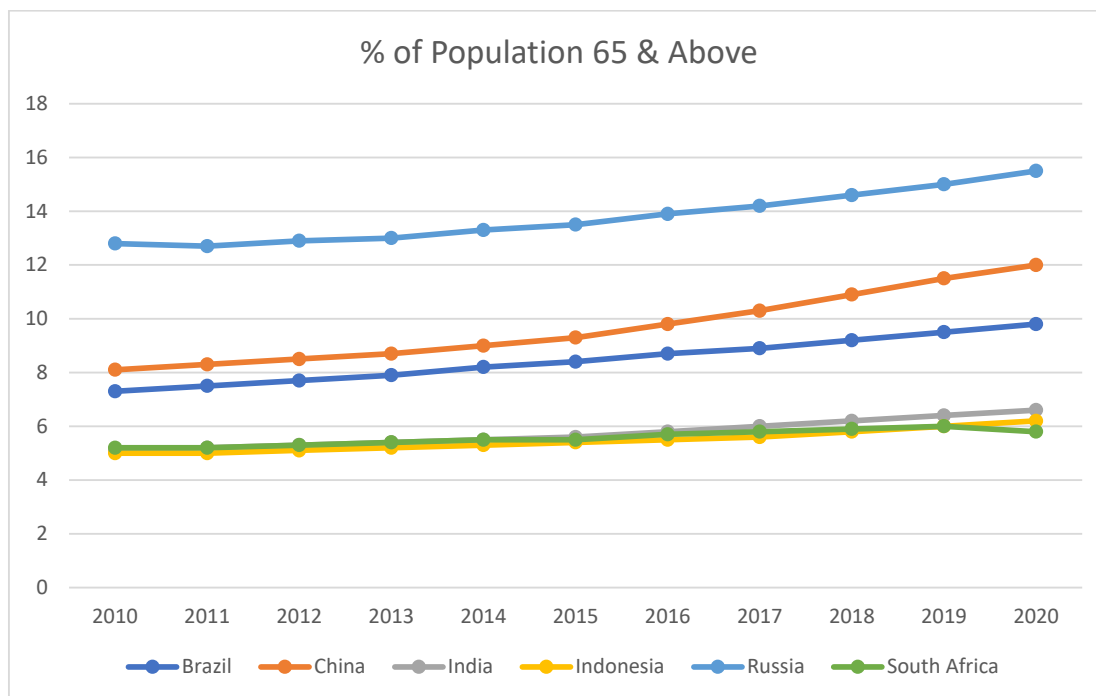


Figure 4.2: Percentage of population aged 65 and above for non-OECD countries (OECD 2021).

Needing Long-term Care

We use OECD data to identify the proportion of the elderly needing care. We only report western European countries due to the limitation of our data. Figure 4.3 indicates that the proportion of elderly individuals needing long-term care has continued to grow in the last two decades. Almost all of the western European countries showed positive trend in terms of long-term care needs. Further we use WHO SAGE data to identify the trends in non-OECD countries. Figure 4.4 represents the proportion of individuals needing care from in the year 2004 and in 2010. Overall, we observe that the proportion of people needing care increased from 2004 to 2010 in India, Ghana, and Russia, whereas the data indicate decrease in proportion for China and South Africa.

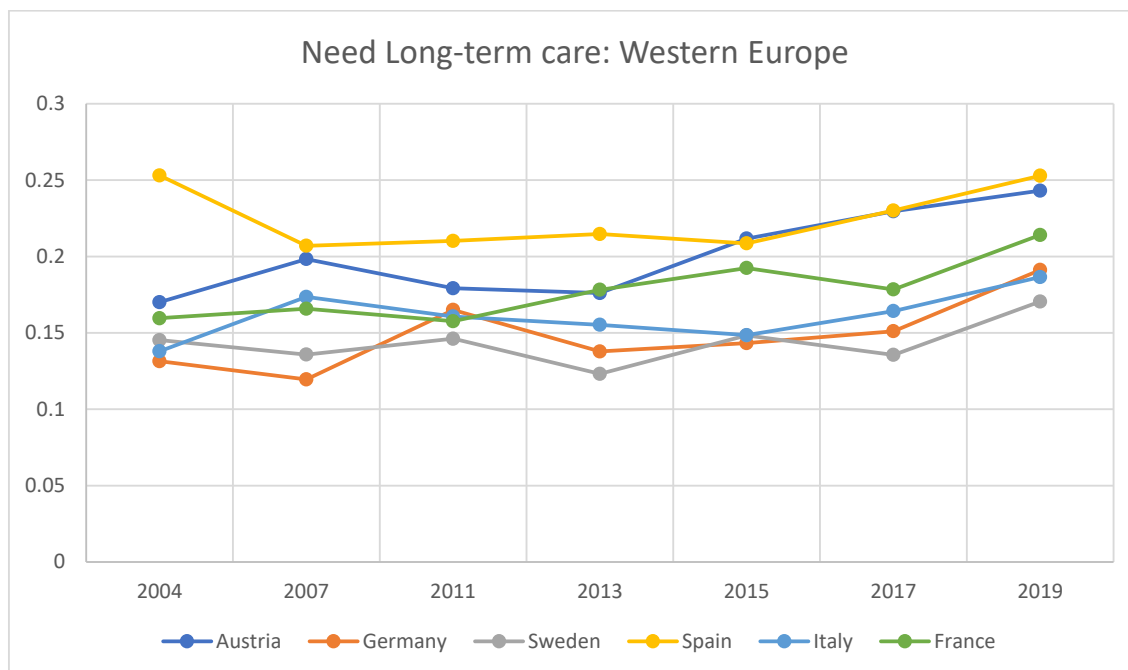


Figure 4.3: Proportion of people need care for western European Counties (OECD 2021).

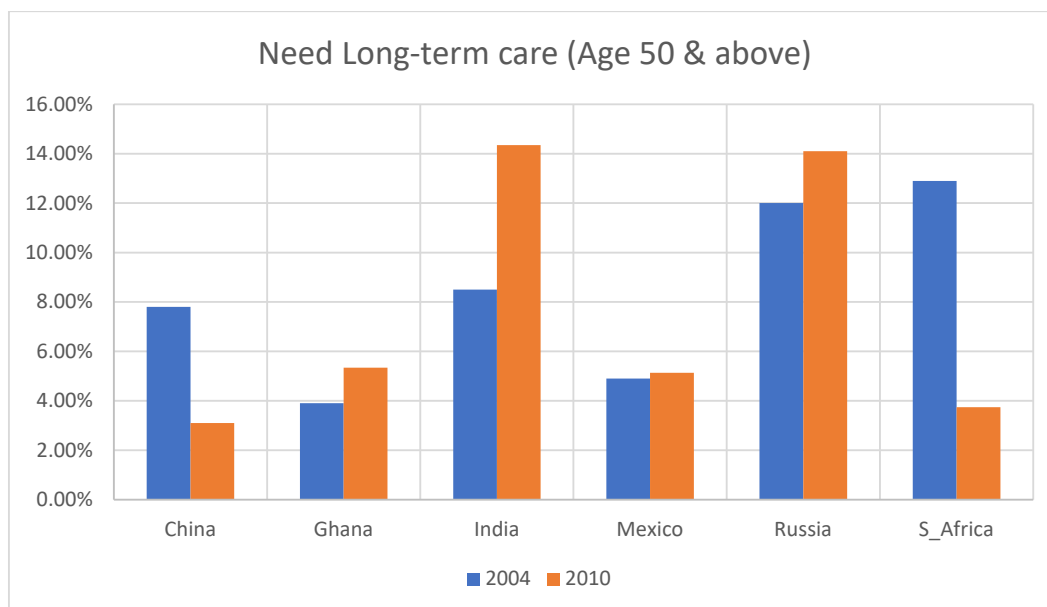


Figure 4.4: Proportion of people need care for countries under WHO SAGE dataset (WHO 2021).

4.2 The declining Supply of Informal Care

An increase in the proportion of the elderly individuals needing long-term care calls for more supply of informal care to maintain the wellbeing of individuals in need of care. However, it comes at the cost of wellbeing losses for informal carers. The growing trend in the aging in both developed and developing countries expects to increase the supply of both formal and informal care. Nevertheless, the informal care still occupies the major portion of long-term care provided. We use WHO SAGE data to analyze the proportion of supply of carers over time. Figures 4.5 and 4.6 show the decline in the supply of informal care between year 2004 and 2010 for all SAGE countries. It is an alarming situation that the supply of informal carers in the countries, which mainly rely on traditional caregiving pattern and contain less/no formal care arrangements, has decreased from 2004 to 2010. Another distressful situation arises after we point out that the proportion of females providing informal care has gone down significantly from 2004 to 2010. It is making the situation worse as females are considered as the main pillars of traditional caregiving pattern in these countries who also share the maximum care responsibilities in the household. We discuss several reasons, further into the report, that are leading to decline in the supply of informal care in these countries.

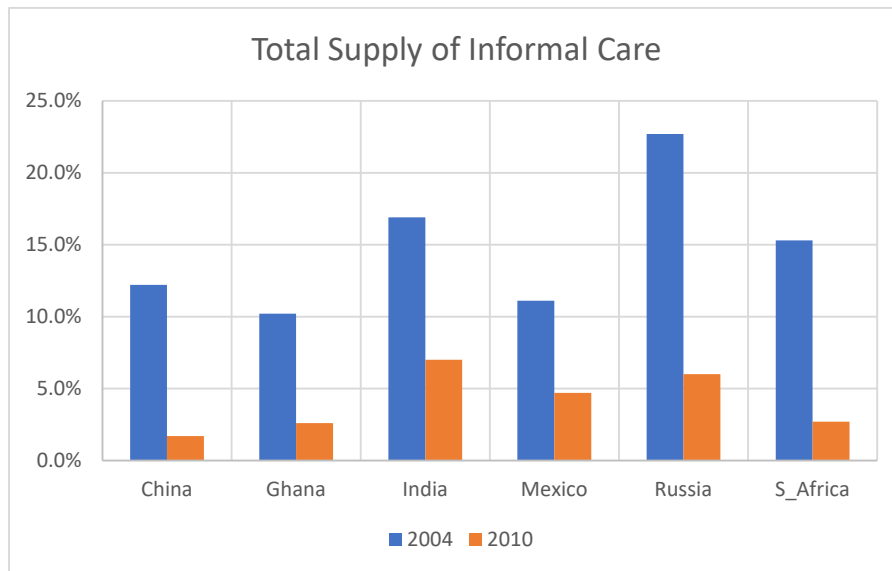


Figure 4.5: Proportion of supply of informal care for countries under WHO SAGE dataset (WHO 2021).

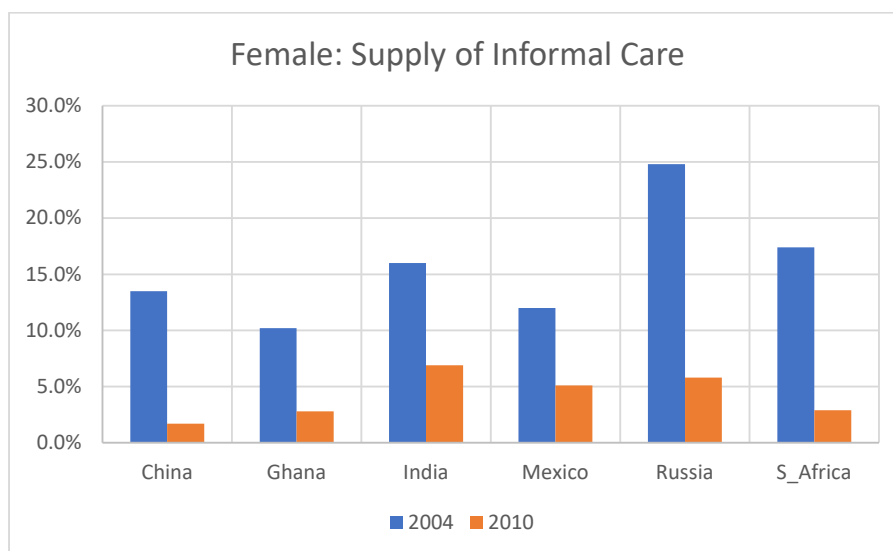


Figure 4.6: Proportion of Informal care supplied by females using WHO SAGE dataset (WHO 2021).

4.3 Unmet Needs and the Insufficiency of Market Mechanisms

An increase in the needs of long-term care due to ageing and a decrease in the supply of informal carers in the recent decades increase the likelihood that more people will go without receiving any form of long-term care, also known as unmet needs. Such a continuous increase in the number of people with more and more unmet needs is an indication that the existing infrastructure as well as informal provisions in place are not sufficient enough to handle the crisis that can be caused by rapidly ageing population. These unmet needs come at the cost of immense welfare loss for individuals who aren't capable enough to sustain without receiving any support. In addition to not receiving physical support, loneliness and lack of mental support are other reasons for the deterioration of health and wellbeing for such individual. The mental health support perhaps can be more crucial in most of the situations, but we do not have sufficient infrastructure and awareness about these factors in number of developing countries. We use WHO SAGE data to find the proportion of unmet needs for the member countries. We find that unmet needs increase significantly between 2004 and 2010 in China and Ghana, whereas it decreases for rest of the member countries as represented in Figure 4.7 and 4.8. However, in case of India, we observe in the section for low- and middle-income countries that the proportion of individuals with unmet needs significantly increased from 2012 to 2019.

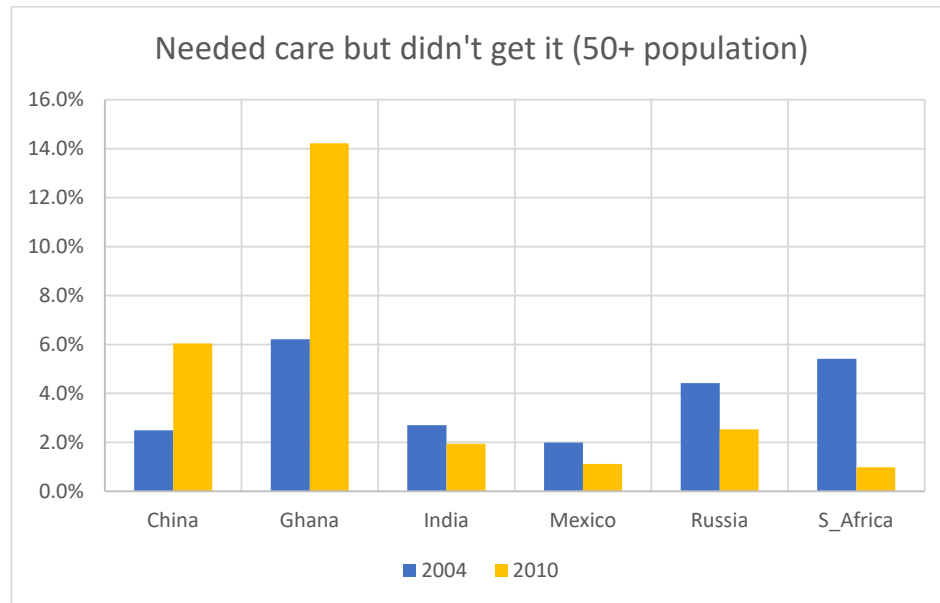


Figure 4.7: Proportion of people aged 50+ with unmet needs for WHO SAGE countries (WHO 2021).

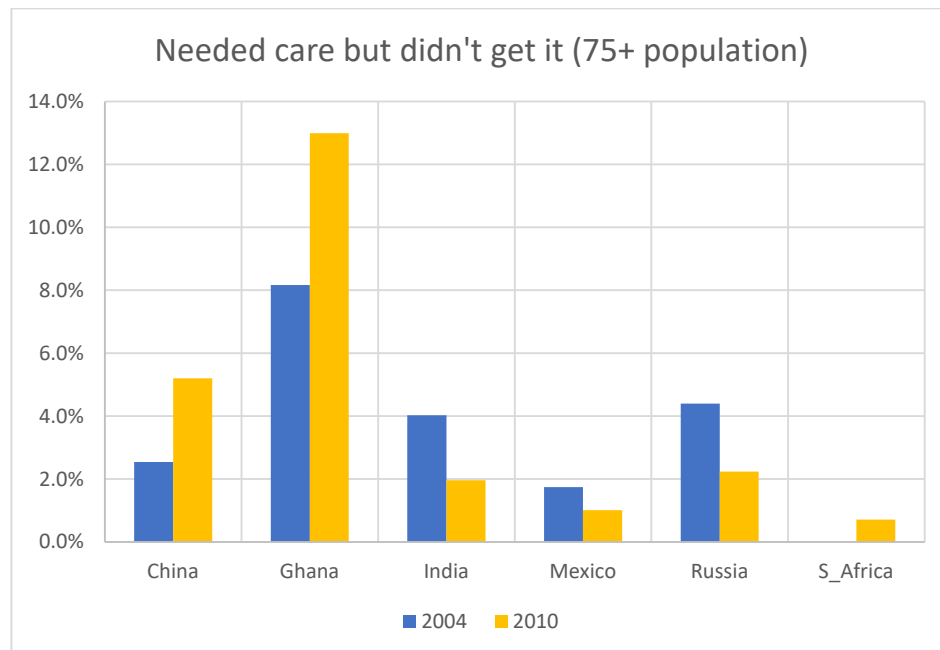


Figure 4.8: Proportion of people aged 75+ with unmet needs for WHO SAGE countries (WHO 2021).

Using individual-level data, we will examine how the level of caregiving needs and unmet needs vary by a country's economic development

4.4 Limited Household Funding

The Figure 4.9 obtained using SAGE data further suggests that the proportion of individuals using savings to pay for health and care expenditure has increased significantly between 2004 and 2010 for all countries excluding South Africa. As we discussed in the previous section, a continuous decline in the number of informal carers available in these countries can help explain this trend. On the other hand, the borrowing capacity of individuals to pay for health and care expenditure significantly declined for all six countries as reflected in Figure 4.10. Using CLHLS data, we observe that there are two main sources of funding for the elderly in China, retirement wages and funding from children/grandchildren. Using Figure 4.11, we establish that financial support from children/grandchildren as a main source of funding is steadily declining over time, whereas, on the contrary, the likelihood of retirement wage being a main source of funding shows increasing trend.

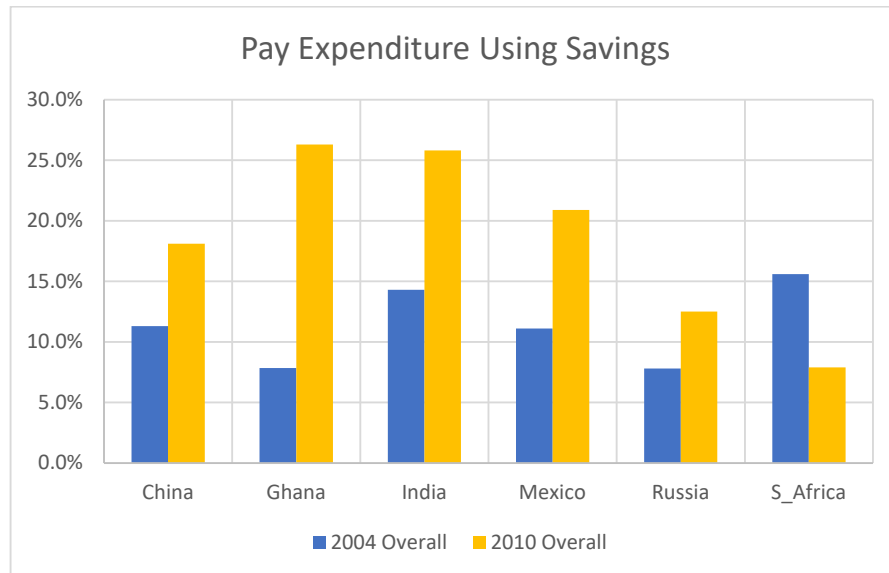


Figure 4.9: Saving is used for paying health and care expenditure (WHO 2021).

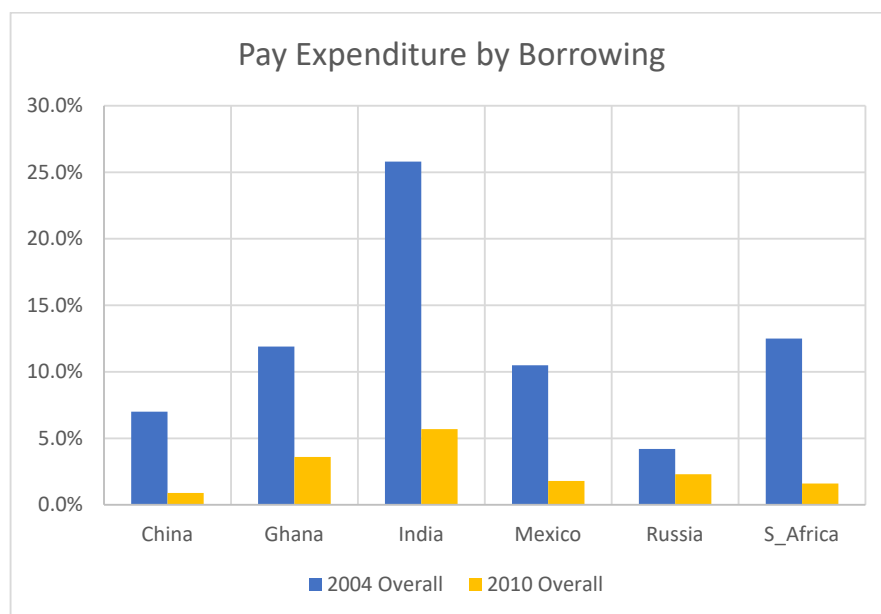


Figure 4.10: Pay health and care expenditure by borrowing from various sources (WHO 2021).

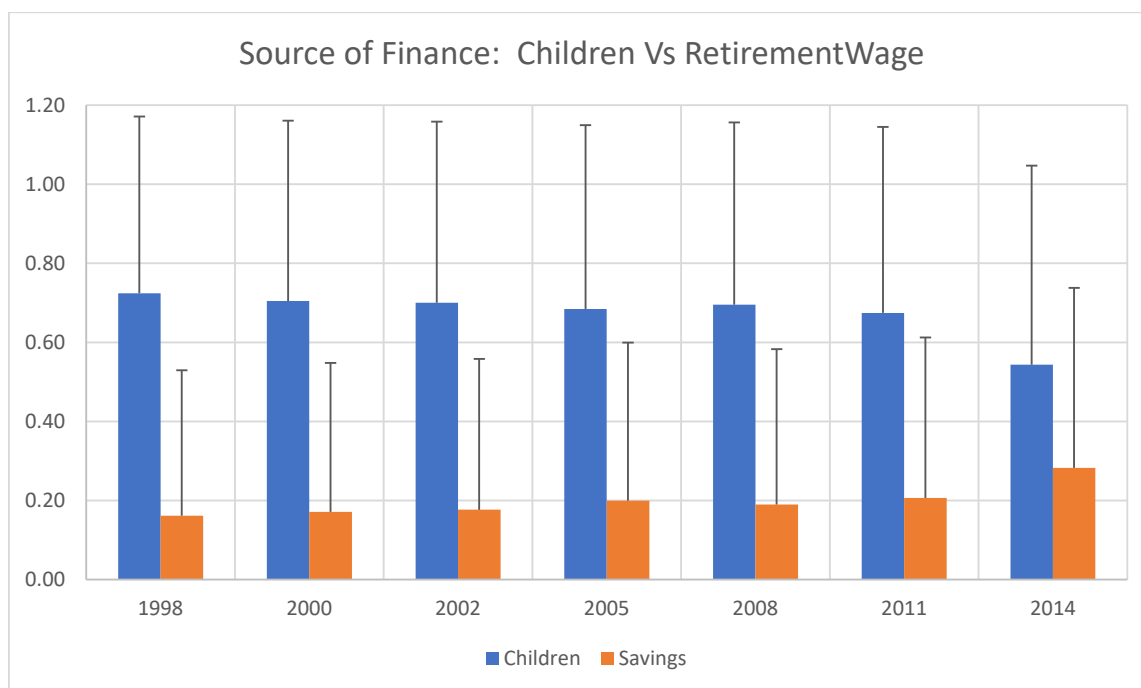


Figure 4.11: Source of financing – Children vs Retirement Wage (China CLHLS 2021).

Note: CLHLS data of China is a cohort study focused on individuals above 65 years of age. The retirement wage corresponds to individual's retirement income as well as savings.

4.5 Trends in home care supports and quality

Figure 4.12 shows that recipients of formal long-term care at home increased in the last two decades for most of the OECD countries, whereas institutional care recipients decreased over time for some countries and remained constant for other OECD countries as represented in Figure 4.13.

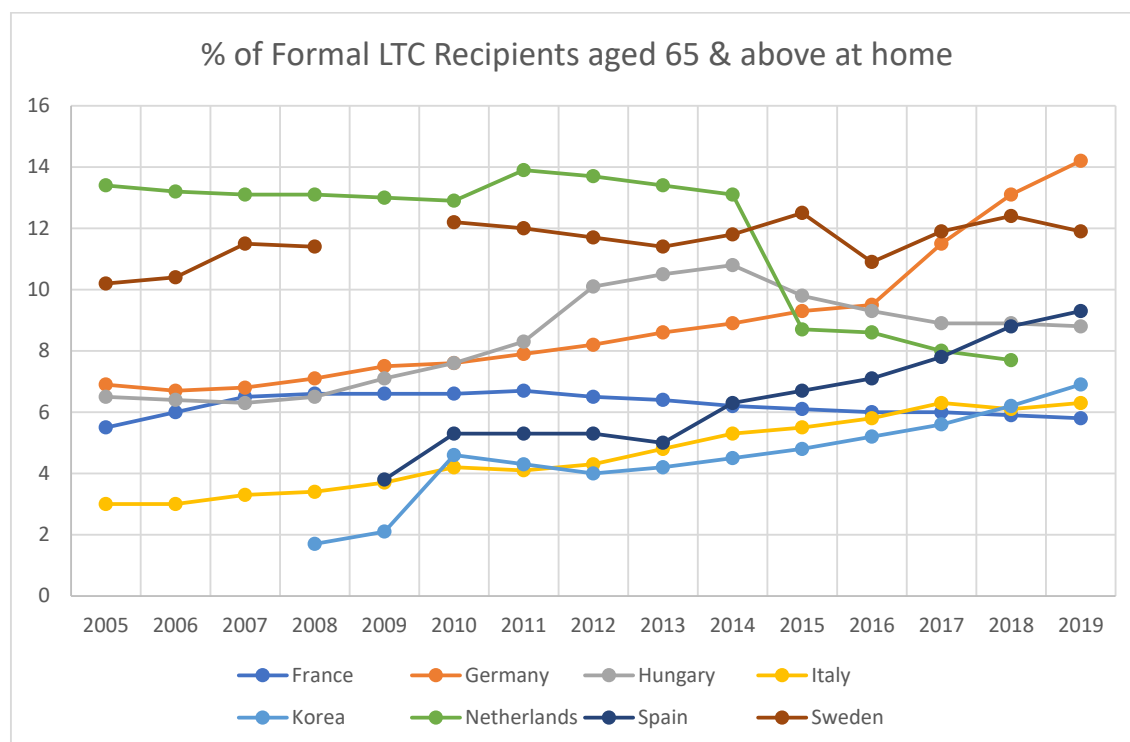


Figure 4.12: Percent of elderly aged 65 and above receiving formal care at home (OECD 2021).

4.6 Trends in Institutional Care

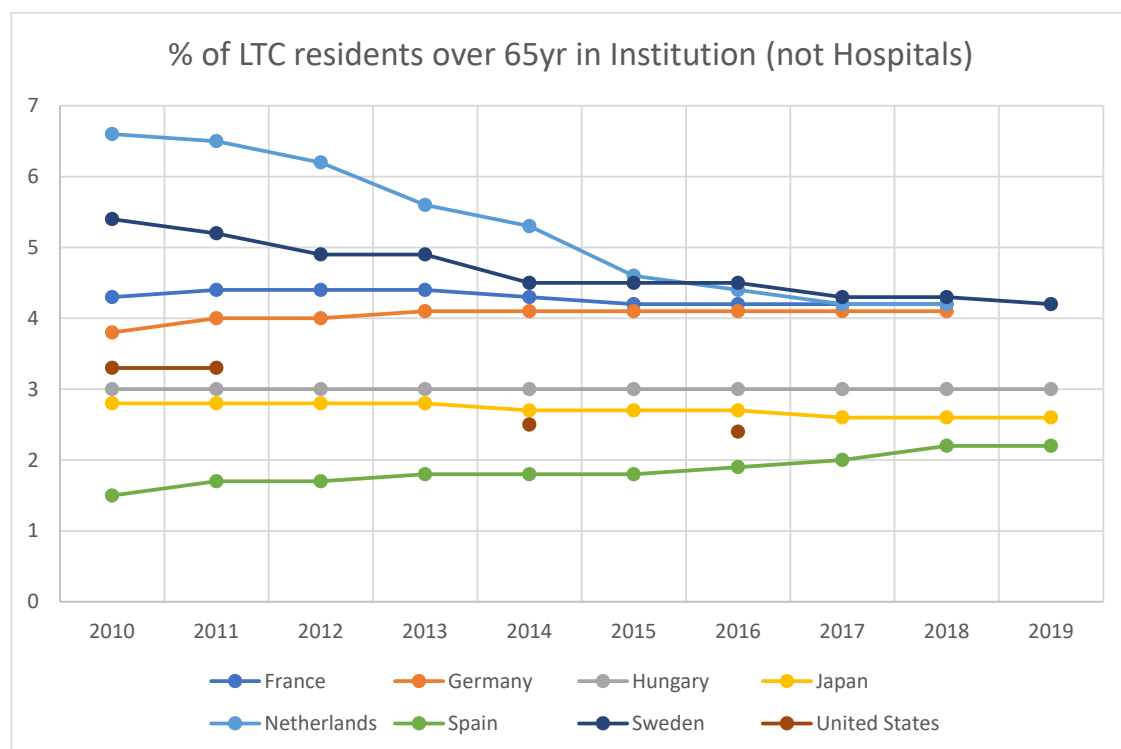


Figure 4.13: Percent of elderly aged 65 and above receiving care in the non-hospital institutions (OECD 2021).

4.7 Expenditure Projections

Globally, the average government expenditure on LTC is less than 1% of GDP (Sheil-Adlung, 2015). Most African countries spend 0% of their GDP on LTC, with the exception of South Africa, which spends 0.2% of its GDP. In the Americas, expenditure ranges from 1.2 percent of GDP in the United States to 0.6 percent in Canada and 0% in Latin American countries. In Asia and the Pacific, New Zealand spends the most on LTC (1.3%) and Australia spends the least (0%), while countries such as China, India, and Indonesia spend less than 1% of GDP on LTC.

In Europe, public spending on long-term care is expected to rise from 1.7 percent of GDP in 2019 to 2.5 percent of GDP in 2050 on average across the EU, with large variations between member countries. In a scenario assuming some upward convergence among Member States, EU-27 expenditure could more than double to 3.4 percent of GDP in 2050 (European Commission, 2021). Assuming that social protection coverage remains at current levels, the reference scenario in the EU (European Commission, 2021) projects an absolute increase in the number of recipients (of all ages) of public long-term care services and benefits as follows: (a) homecare recipients from 6.9 million in 2019 to 8.2 million in 2030 and 10.5 million in 2050; (b) residential care recipients from 4.5 million to 5.1 million in 2050¹.

¹ It should be noted that this scenario assumes that half of the projected gains in life expectancy are spent without disability.

Such changes are predicted to be steeper than LTC expenditures as the OECD data shows below. Figure 4.14 indicate that the health expenditure as a share of GDP increased, on an average, by 2 percentage points in the past two decades. However, unlike other OECD countries, only the US has experienced close to 5% increase in health expenditure as a share of GDP. Hungary is the only OECD country that witnessed decrease in health expenditure as a share of GDP in the past two decades. Similarly, Figure 4.15 shows that average per capita long-term care (health) expenditure slightly increased for OECD countries between 2002 and 2015. However, the increase was significantly higher for Netherlands, Sweden, and Japan, whereas the long-term care (health) expenditure for Hungary was constant between these years.

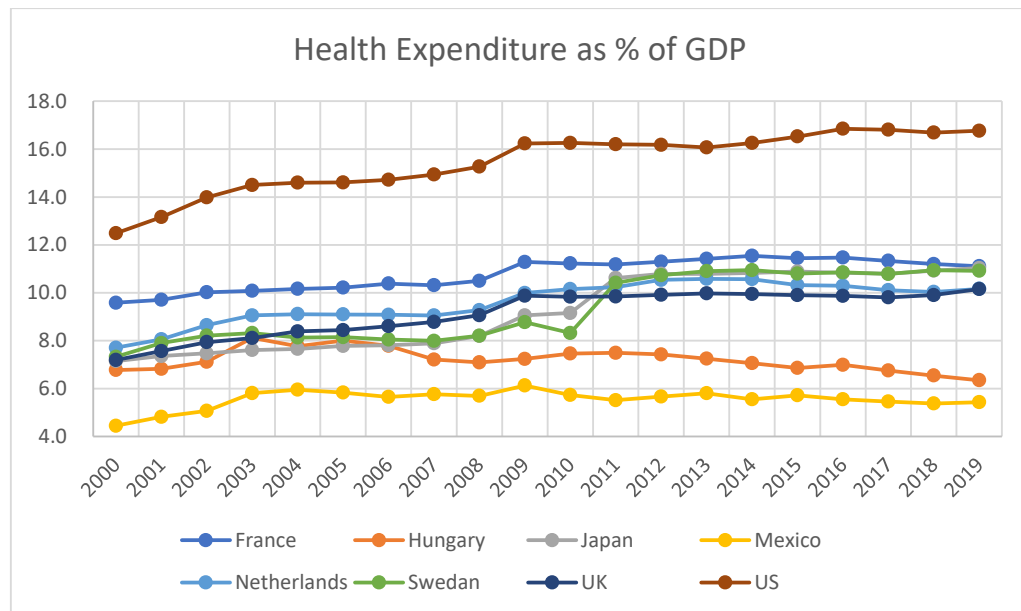


Figure 4.14: Health Expenditure as a share of GDP for OECD countries (OECD 2021)

- Per capita Long-term care (health) Expenditure in \$ (2010)

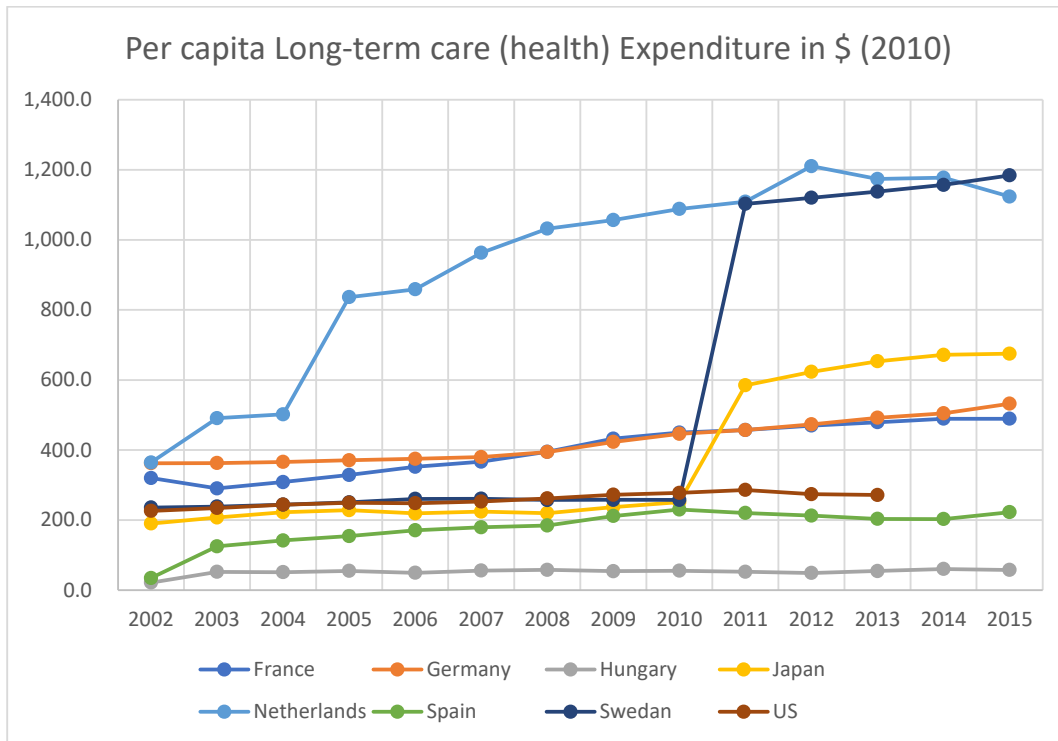


Figure 4.15: Per capita long-term care (health) expenditure in USD (2010) (OCED 2021)

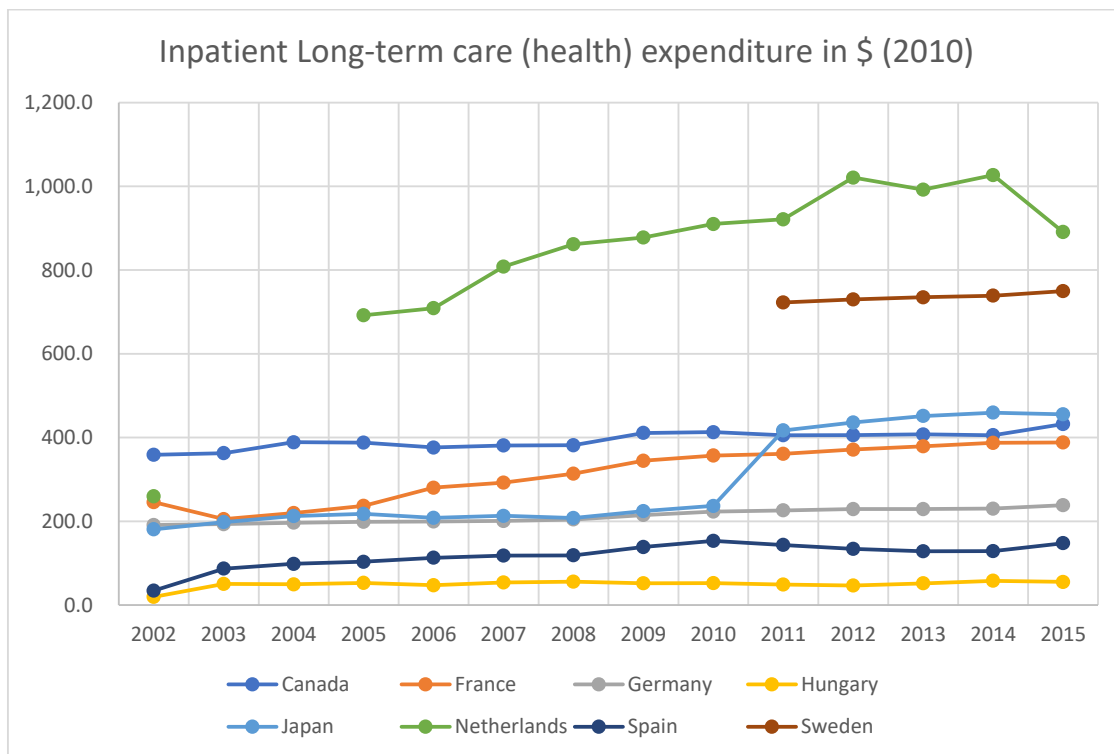


Figure 4.16: Inpatient long-term care (health) expenditure in USD (2010) (OCED 2021)

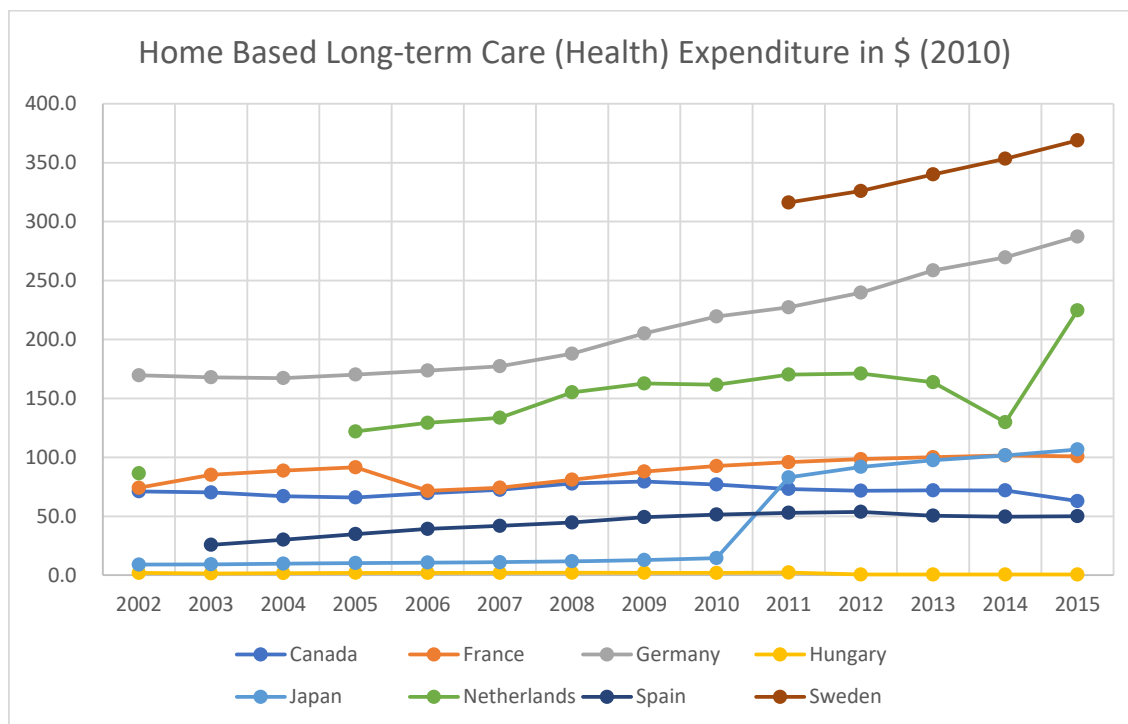


Figure 4.17: Home-based long-term care (health) expenditure in USD (2010) (OCED 2021)

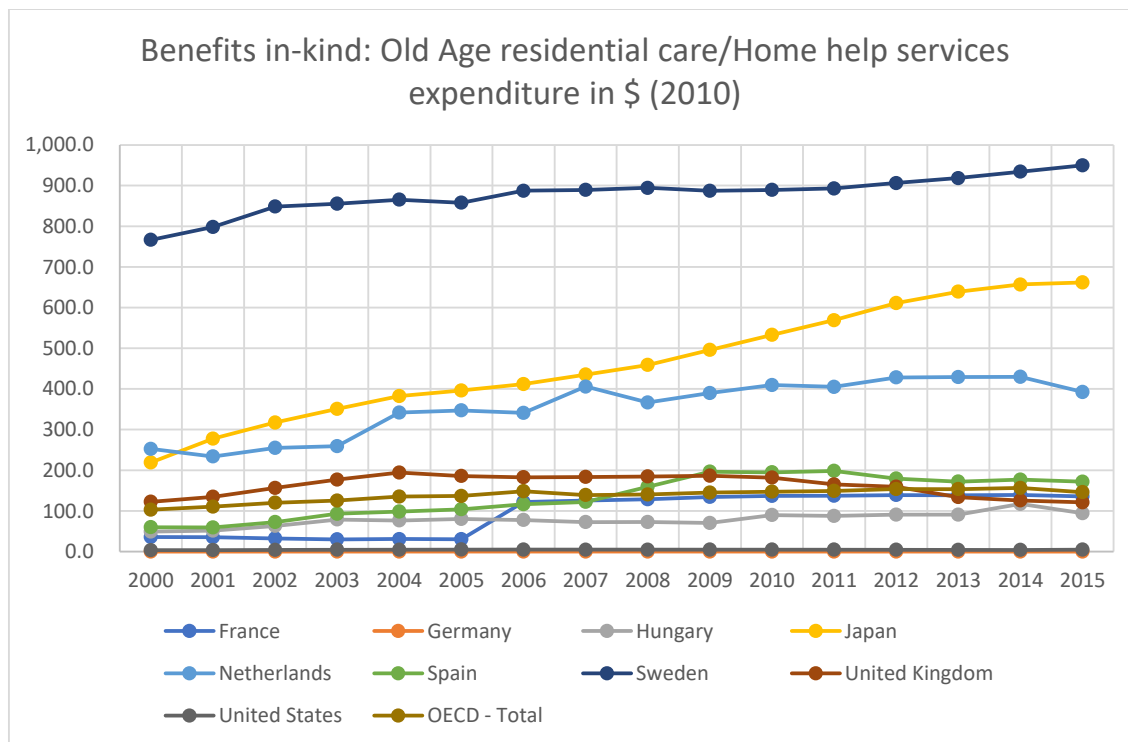


Figure 4.18: In-kind benefits for old age residential care/home help services expenditure in USD (2010) (OCED 2021)

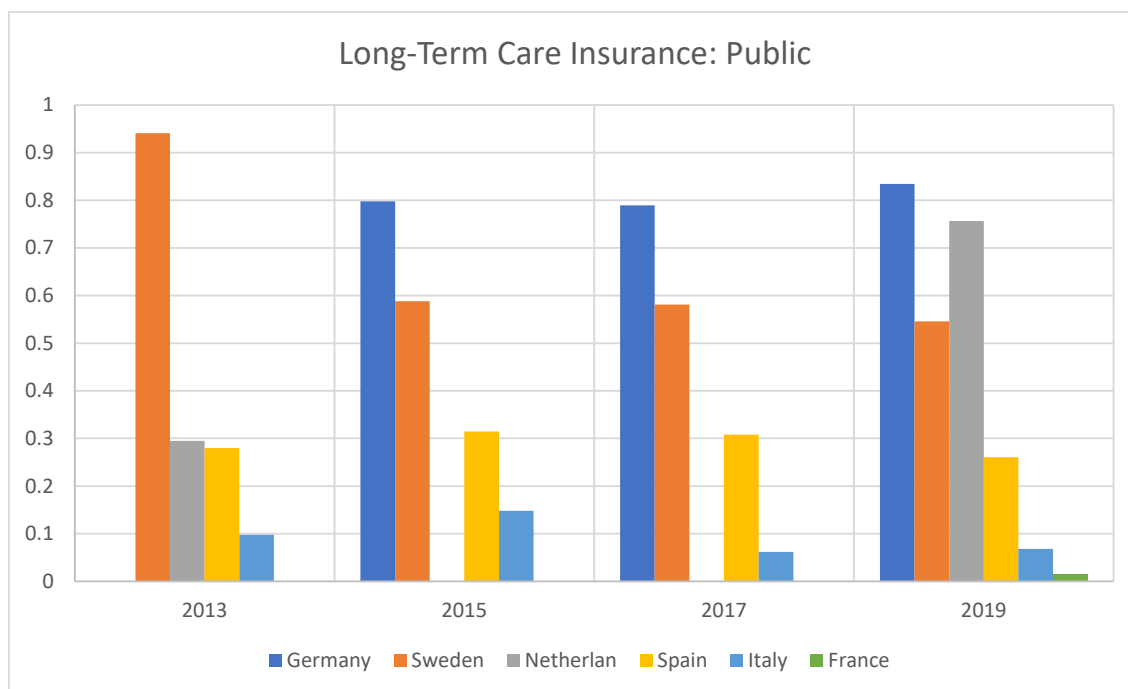


Figure 4.19: Proportion of Public long-term care insurance in Europe (SHARE 2021)

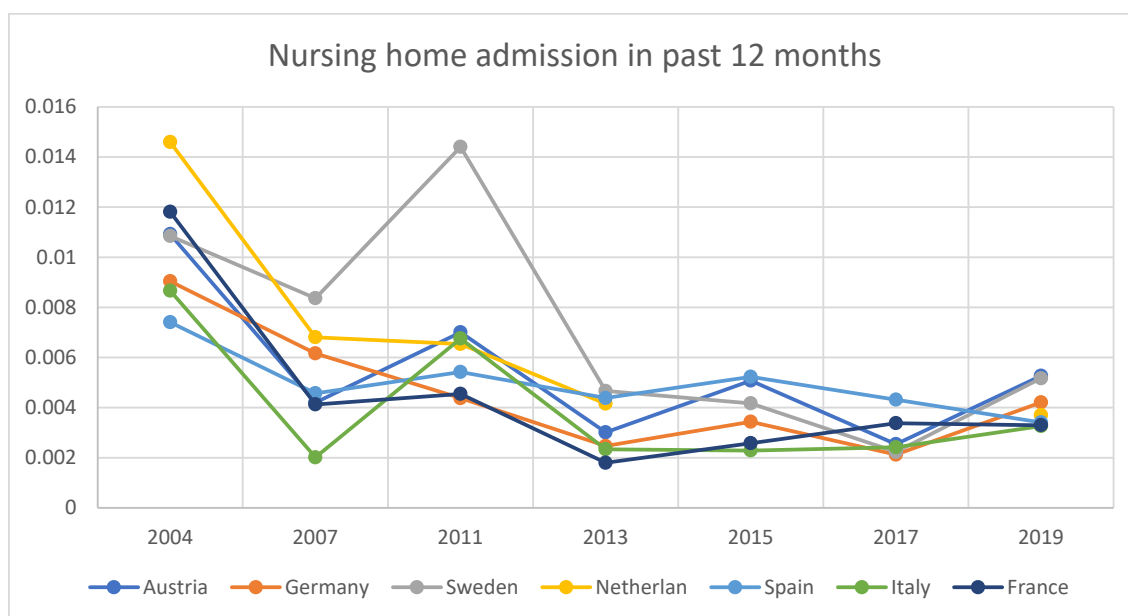


Figure 4.20: Proportion of nursing home admission last year in Europe (SHARE 2021)

Non-OECD Countries

- Health Expenditure

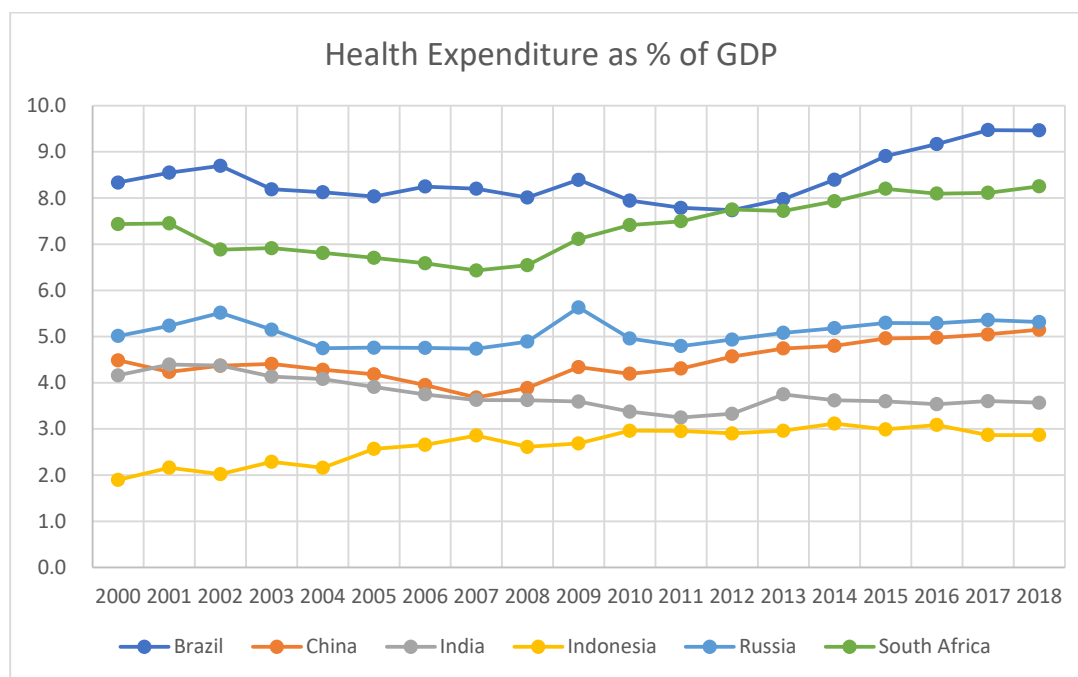


Figure 4.21: Health Expenditure as a share of GDP in non-OECD countries (OECD 2021)

- Long-term care expenditure as a share of health expenditure

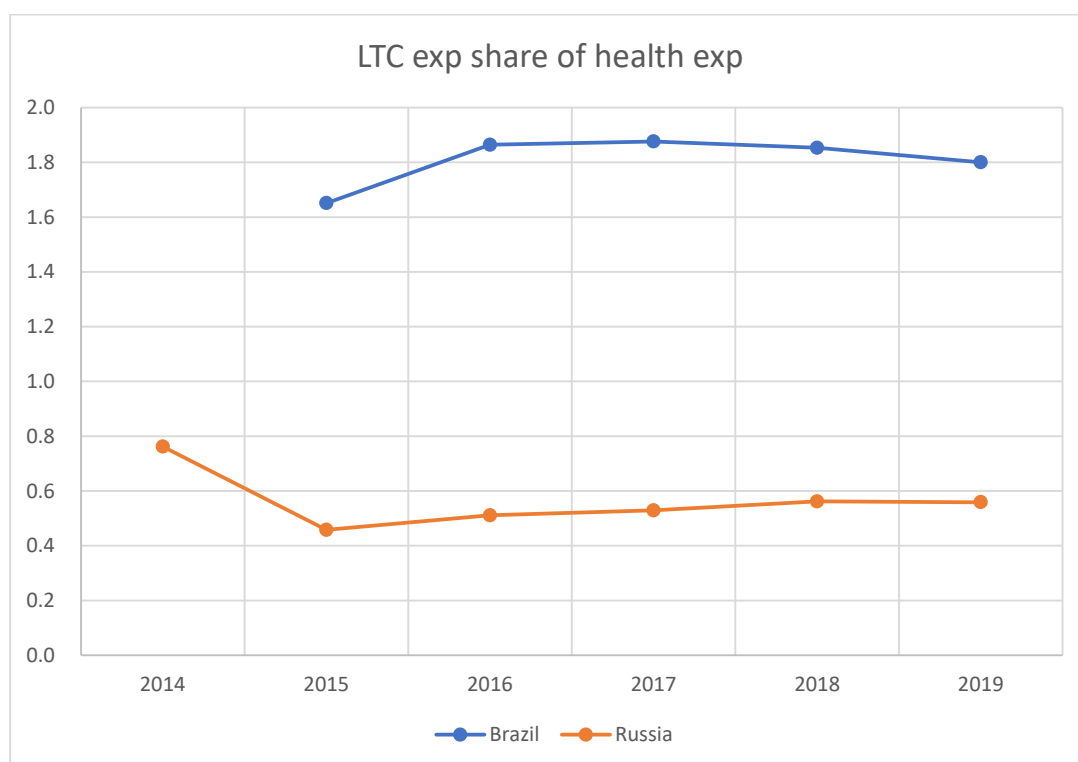


Figure 4.22: Long-term care expenditure as a share of health expenditure in non-OECD countries (OECD 2021)

4.8 Value of Informal Care

The effect of informal care includes issues around unmet needs of individuals, but especially it brings concerns on to caregivers themselves. Caregiving entails emotional and personal investments alongside opportunity costs of time for caregivers. Previous studies have documented widespread evidence on the consequence for caregivers' wellbeing from providing care (van den Berg and Ferrer-i Carbonell, 2007; van den Berg *et al* 2014) including effects on health, employment and financial wellbeing (Ettner *et al*, 1994), which are found to explain up to 50% of the total costs of dementia among caregivers (Hurd *et al*, 2013). Coe and Van Houtven (2009) estimate that providing care for a sick mother increases the number of depressive symptoms reported by 47% (compared to caregivers whose mother died).

There have been a number of attempts to value informal care with include a number of studies that examine labor market consequences for caregivers, however only a handful of those studies show causal evidence, and the majority of the literature relies on association evidence. In the United States, the value of informal care is argued to exceed the entire Medicaid budget, and its estimated economic value of about \$350 billion in 2006 (Burwell *et al*, 2006). The opportunity cost in terms of wages due to informal care has been estimated at as much as \$5 billion (Chari *et al*. 2015). Skira (2015) considers the intertemporal trade-offs between employment and caregiving, and performs a range of policy experiments (i.e., caregiving allowance, paid leave, unpaid leave) which suggest that subsidies can influence informal care provision. The European Commission (2021) estimates that the annual value of time spent providing informal care in the EU-27 is estimated at 2.7 %, which exceed the average spending on LTC as a share of GDP. This estimate comes from the so-called proxy good method which estimates the market price equivalent of substitutes for specific care-giving tasks.

5 Limitations of Traditional Caregiving Models

5.1 Availability of informal care and Unmet Needs

Informal care is the primary type of long-term care for elderly individuals in need of care even when it does not always have budgetary implications, and hence it might be seen as a cost-effective way of providing care, there are important indirect costs of informal care, namely forgone employment, as well as wellbeing losses of informal caregivers. Informal care typically refers to unpaid care which entails lower monetised costs of long-term care and turn them into opportunity costs. In the US, the latest AARP the report *Caregiving in the United States* 2020 estimates that nearly 80% of the estimated 53 million unpaid caregivers provide care to people aged 50 and over, 65% of caregivers are women, with a median age of 52 years, and although most caregivers care for one person, 24% percent care for two or more adults (AARP, 2020).

Even though informal care is critical to meeting care needs, there are reasons to believe it will play a more limited role in the future due to declining family sizes, increased divorce rates, and the underlying inequalities that it creates by keeping women out of the labour force and some struggling families (Costa-Font *et al.*, 2015). Indeed, in the absence of caregiving supports in the household, individuals either receive support from the

community or the government. However, when such support is not available individuals might then go with unmet needs. Increasingly, the availability of support and need are measured in different datasets which allows estimating the share of the population with unmet needs. In Europe, non-cohabiting adult offspring still provided most of the informal care in later life and friends or neighbours play a more marginal role (Brenna and Di Novi, 2016; Di Novi et al., 2015). Indeed, children continue to play a substantial role in the total care provided, especially among frail older people who depend on youngsters for their daily needs. Contacts between adult children and elderly parents and the informal care provided by adult children represent an important support for the elderly and a valuable substitute for, and complement of, formal care particularly in welfare states where there are strong family bonds (Van den Berg et al., 2004; Van den Berg et al., 2005).

In the low- and middle- income countries, the unmet needs due to decrease in availability of informal care and non-affordability of formal care are continuously growing and there seems to be no immediate solution in place to tackle this crisis. The unmet needs come at the cost of huge wellbeing loss for individual as well as society, in general. Below we offer some estimates of unmet needs in China and India.

Informal Caregiving and Unmet Needs in China (Evidence from CLHLS data): The economic and population reforms in China led to reduction in poverty and increase in longevity for Chinese people. However, it also changed the family structure and increased the average life expectancy, resulting in a growing number of elderly population and in a declining number of informal caregivers. A large increase in life expectancy and prevalence of chronic diseases add a massive burden on already insufficient traditional informal care system in which women play a major role of caregiving. The lack of infrastructure for formal caregiving system in the country, which relied exclusively on filial piety for centuries, ends up increasing the number of people with unmet needs. We analyse both CLHLS (Chinese Longitudinal healthy Longevity Survey) and WHO-SAGE (Study on Global Aging and Adult Health) data for China and observe the trends indicating the increase in unmet needs and decrease in availability of informal care. Figure 5.2 represents that people with unmet needs risen continuously between 1998 and 2014, whereas Figure 5.1 indicates that availability of informal care decreased during the same time. We also observe that depletion of savings to fund the long-term care has risen constantly pointing that lack of informal caregiving arrangements increasing the demand for formal care. However, the depletion of savings at a faster rate is not sustainable for elderly individuals who has less or no earning source. Also, the decline in filial piety comes at the cost of psychological wellbeing for elderly people as it negatively affects their overall health. Figure 4.11 represents that children/grandchild are the major sources of finance for elderly population, but the share of children supporting their parents/grandparents financially is continuously in decline from 1998 to 2014. In addition, we draw projections for China till 2050 that indicate the expected trends for the demand of care (Figure 5.3), supply of informal care (Figure 5.4), source of financing (Figure 5.5), and unmet needs (Figure 5.6).

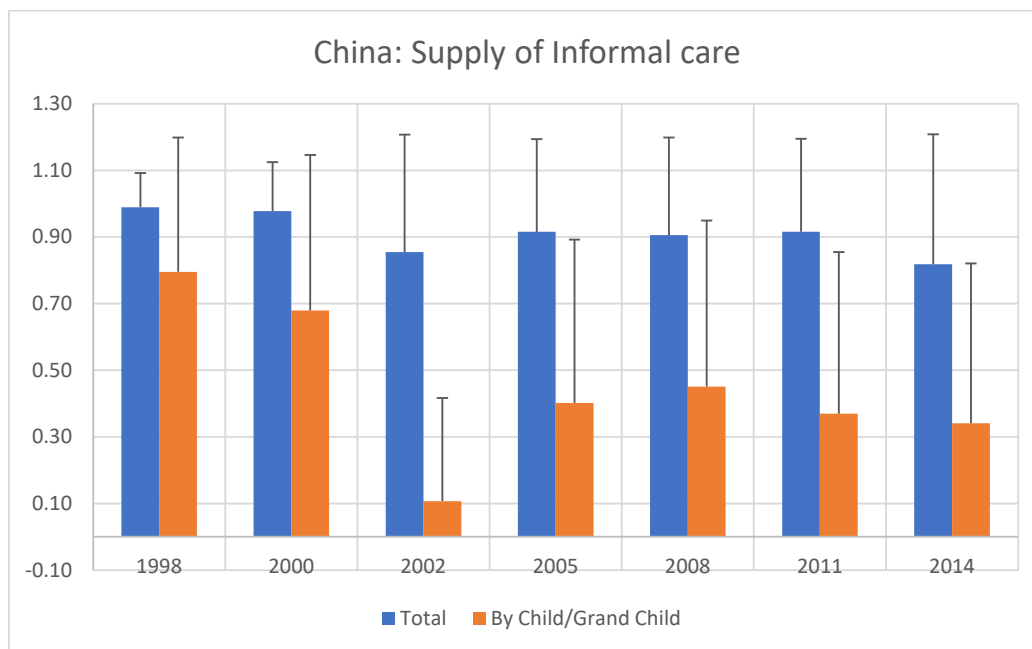


Figure 5.1 – Total supply of informal care vs care supplied by children and grandchildren (Source – CLHLS data).

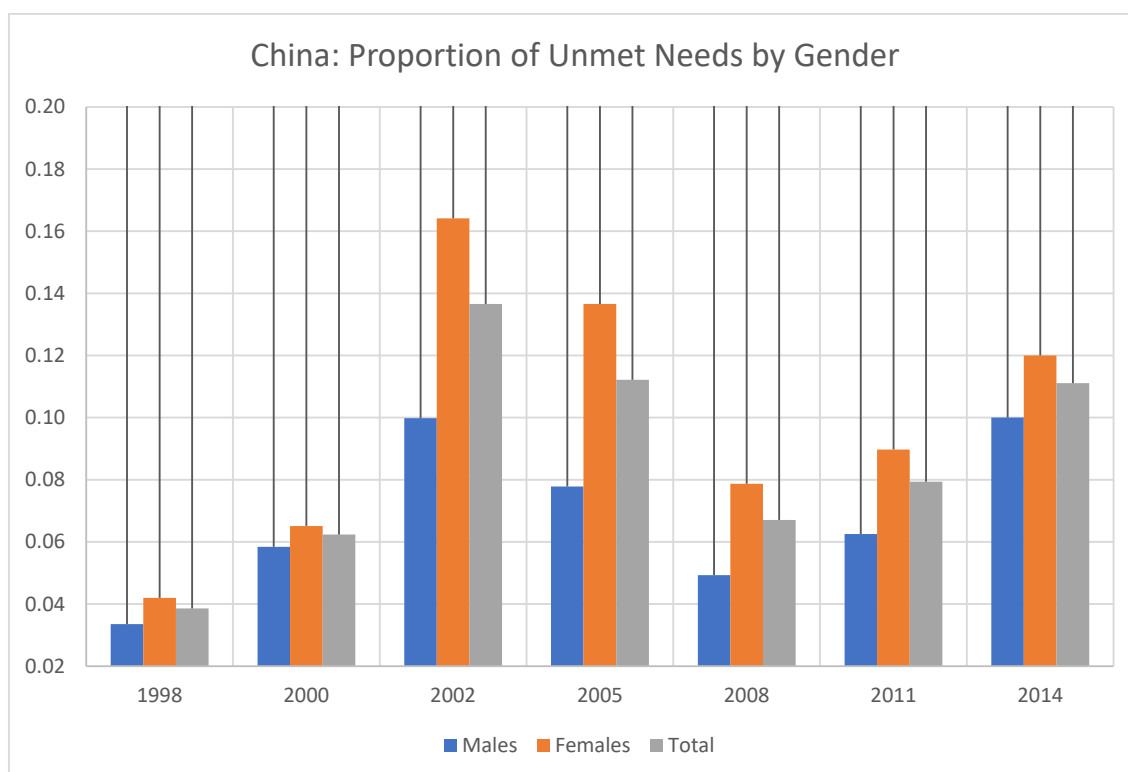


Figure 5.2 – Trends in unmet needs proportions by gender (Source – CLHLS data).

Projections for China

i) Need of Care

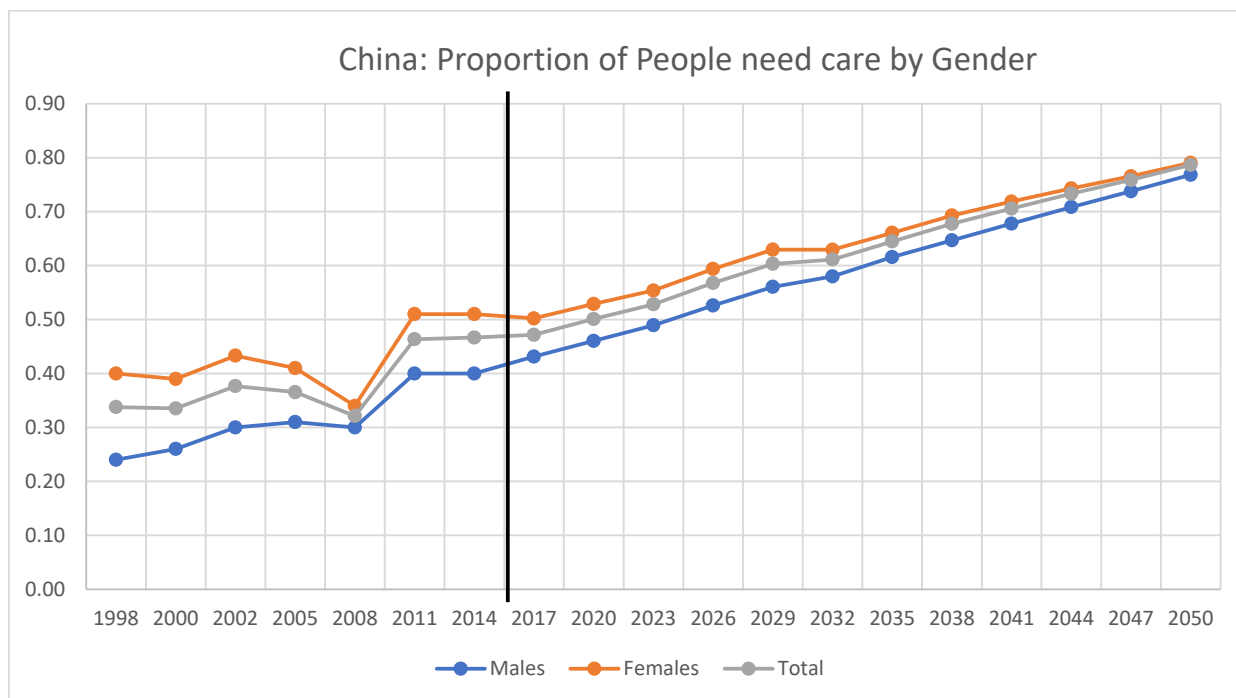


Figure 5.3 – China: Projections for proportion of people needing care. Black line separates actual and forecasted. (Source CHLHS data)

ii) Supply of Informal Care

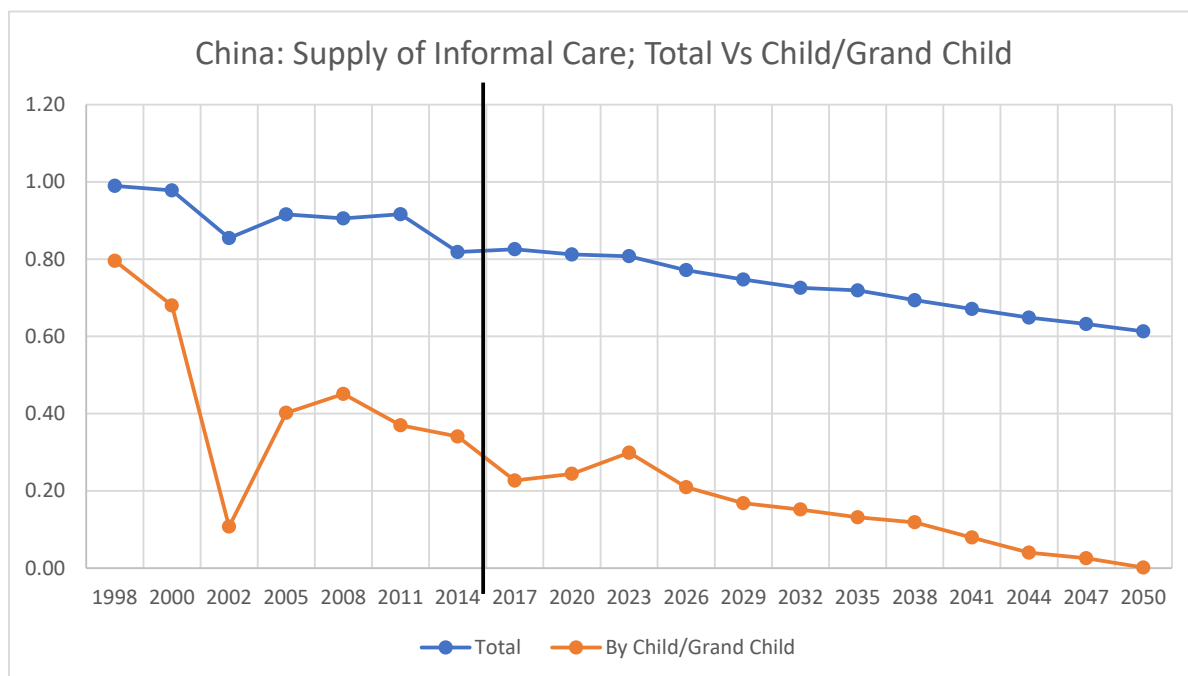


Figure 5.4 – China: Projections for proportion of people supplying informal care. Black line separates actual and forecasted. (Source CHLHS data)

iii) Source of Finance

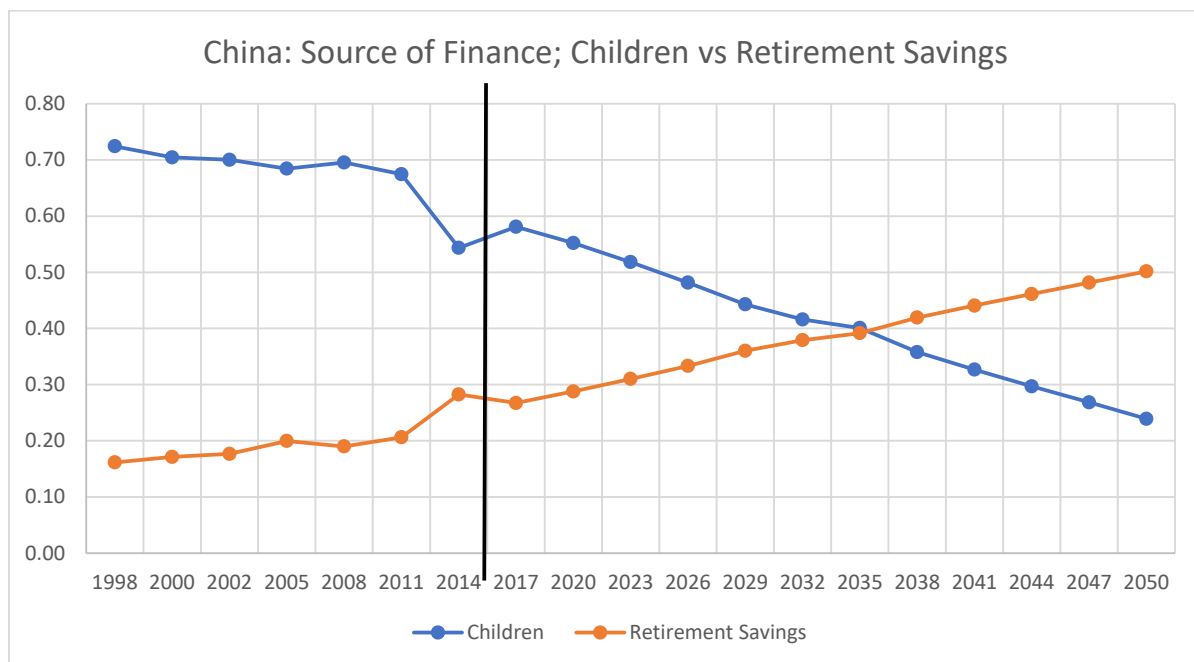


Figure 5.5 – China: Projections for Source of financing for elderly. Black line separates actual and forecasted. (Source CHLHS data)

iv) Unmet Needs

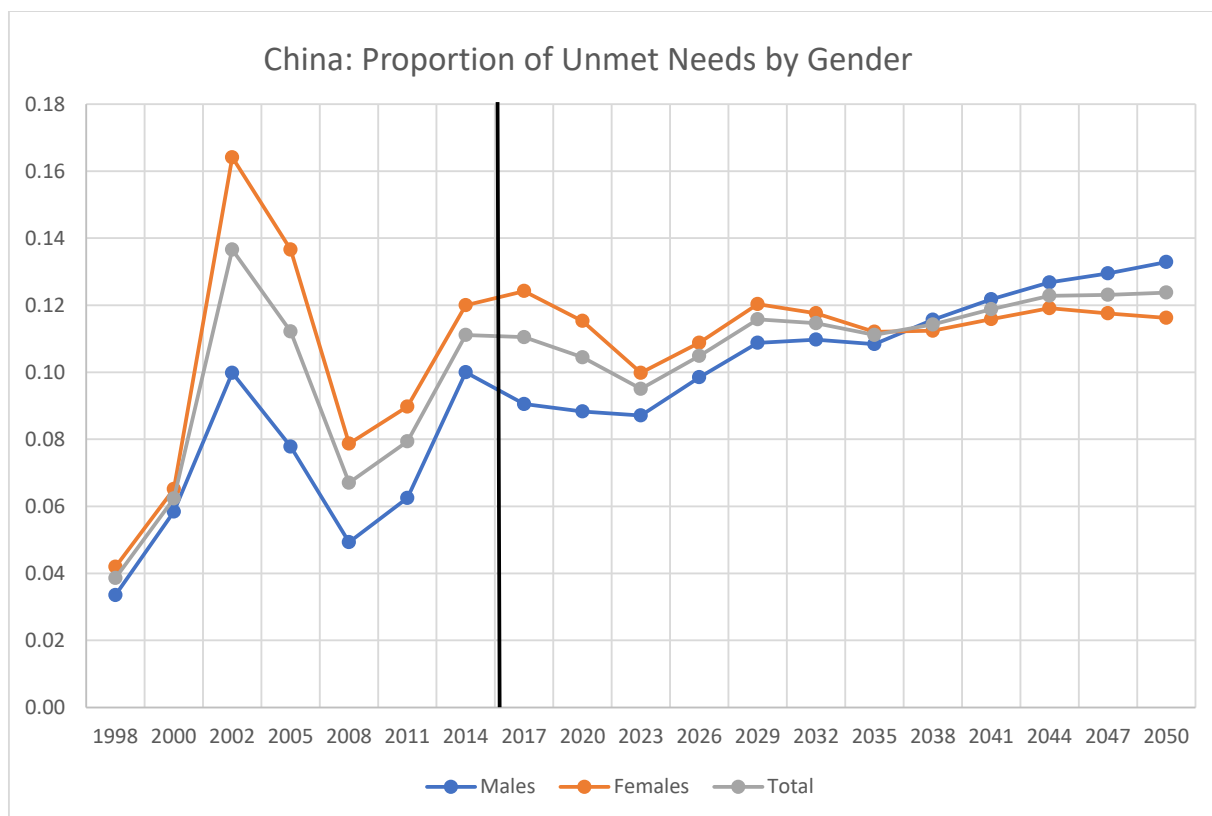


Figure 5.6 – China: Projections for Source of financing for elderly. Black line separates actual and forecasted. (Source CHLHS data)

Unmet needs in India (Evidence from LASI Data): The evidence drawn using the WHO’s SAGE data on India suggests that the unmet needs for individuals seeking care slightly decreased between year 2004 and 2010. However, the recent nationally represented pilot (2012) as well as first wave (2018) of Longitudinal Study of Aging in India (LASI), a sister survey of the US Health and Retirement Study, indicate that of all individuals seeking care almost 80% of them could not receive it and no alternate arrangements such as long-term care insurance (public or private) exist to address this unfortunate situation. Figure 5.7 shows the trends in the unmet needs over time for India. Although India is relatively young country as almost 65% of its population aged 35 or below, the mobilization of manpower to big cities due to decrease in agricultural dependency of India’s economy decreasing the availability of informal care in small towns and villages. India’s reliance on traditional caregiving based on altruism is no more sustainable due to changing conditions in its demography. Therefore, individuals in need of care are facing challenges because of reduction in the availability of informal care, resulting in a massive gap between demand and supply of informal care. The issue of unmet need likely to grow as India marches into the future with increased life expectancy and increasing urbanization in the country. The projections for India in terms of need of care, supply of care, and unmet needs till 2050 are represented in the Figure 5.8. Perhaps affordability of formal long-term care is another issue India likely to face given that there is no explicit market available for long-term care in India, in general. There is an urgent need of policy action to tackle this crisis. Some of the following initiatives and policy actions suggested here can be considered towards establishing the sustainable long-term care system in India.

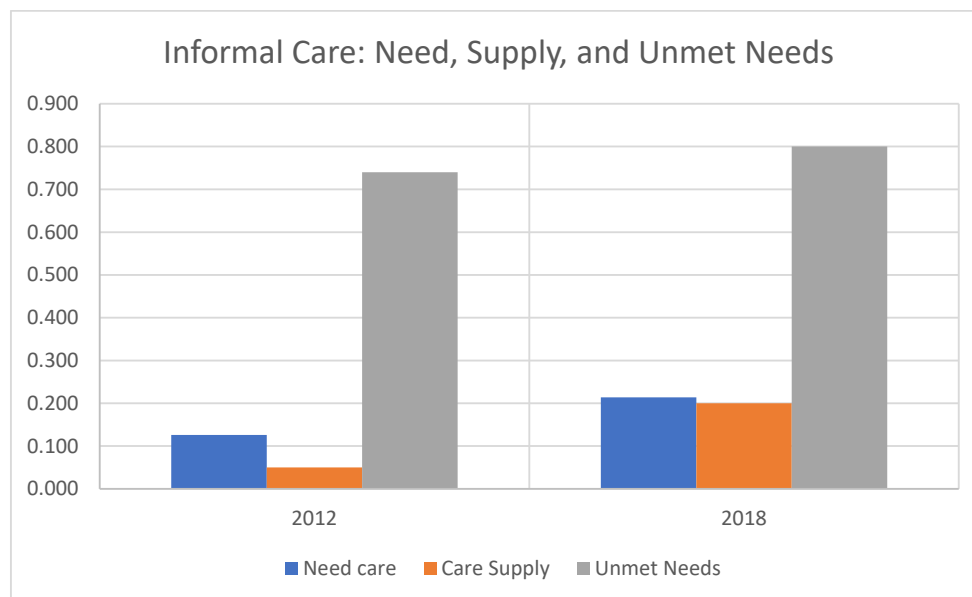


Figure 5.7 – Informal care needs, supply, and unmet needs, evidence from Longitudinal Aging Study in India (Waves: 2012 & 2018).

Projections for India

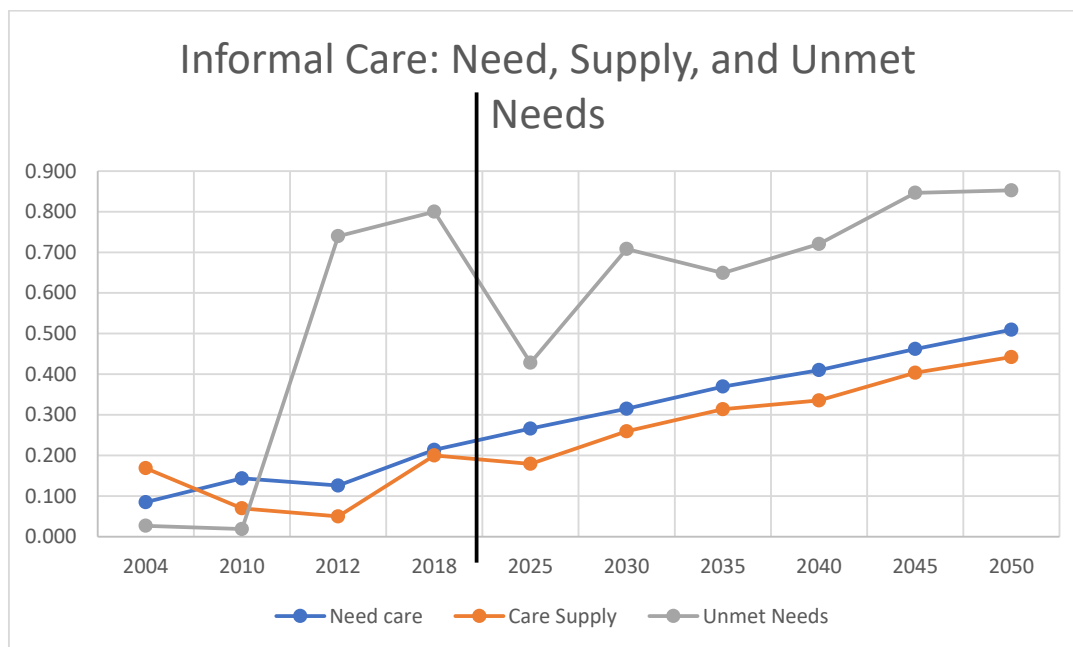


Figure 5.8 – India: Projections for Informal care needs, supply, and unmet needs. Black line separates actual and forecasted.

5.2 Gender inequality

Caregivers of working age may be forced to forego employment due to difficulties in reconciling care and employment, this impact women more than men who find it especially difficult to reconcile care and work, potentially impeding further gains in women's employment rates. Women constitute the majority of the informal care labour force. Indeed, in Europe is a substantially higher proportion of female carers in the majority of countries sampled, where the ratio of men to women carers is about 1 :2 (Rodrigues et al, 2013).

Carmichael and Charles (1998) demonstrated that the intensity of care is an important variable in estimating the impact of care on both participation and wages earned. When informal caregivers provide more than 20 hours of care per week, they are more likely to exit the labour market, and even when they participate, their earnings are also lower than those of non-caregivers. For caregivers below the 20-hour/week threshold, they find that they worked fewer hours per week (Carmichael and Charles, 1998). However, estimates differ across the European geography, as employment effects are stronger in southern Europe.

The preservation of the traditional caregiving model may give rise to significant gender inequalities, which might entail lower formalisation and remuneration of women, lower pensions later in life which points towards the need of prioritising the development of some network of long-term care supports. Across OECD countries, about three in five caregivers over 50 years of age are women (OECD 2021). However, women are the main users of informal care too. The availability of a spouse to provide informal care is associated with lower public expenditure for LTC (Yoo et al. 2004). However, the impact on informal caregivers' health and employment through foregone wages and other opportunity costs can be significant. One way to compensate such effect is via cash allowances, which have been found to reduce early retirement intentions among caregivers (Costa-Font and Vilaplana,

2022b), but are argued to incentivise traditional gender roles by allowing women to continue providing care.

5.3 Older age preferences

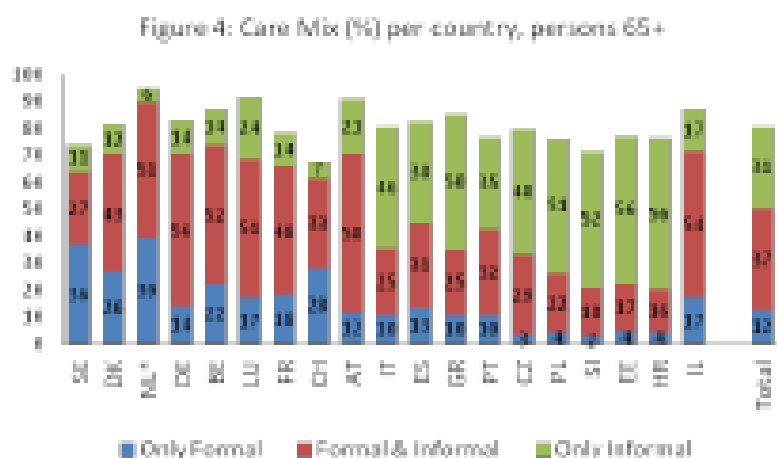
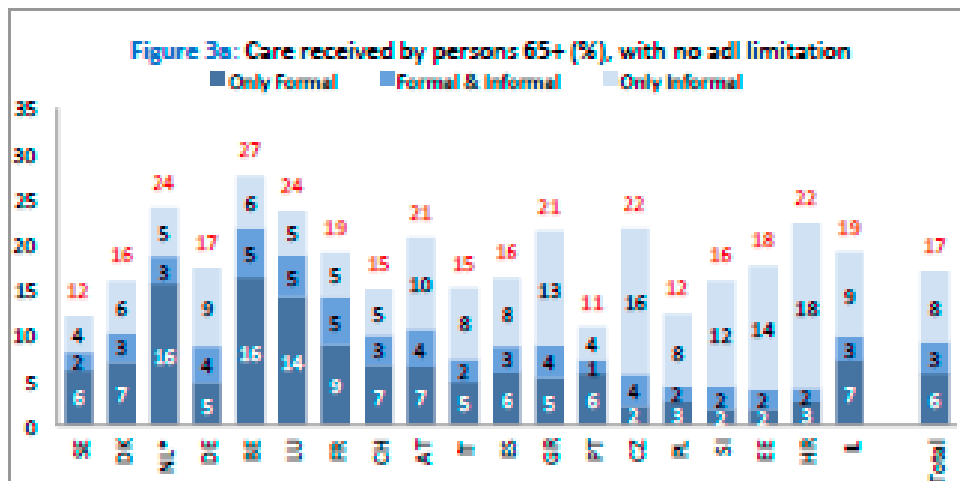
Several surveys provide information on the individual preference for care at older age which reflected the values each society is constrained. Among those preferences it is important to consider so-called ‘bequests motives’, namely incentives to support older members of the family with the aim of ensuring a bequest. Furthermore, individuals often hold on to expectations of informal care provision by spouse and family members which might not be reasonable and might have incorrect perceptions of how long-term care is funded and the extent of government involvement. Some survey evidence from the US shows that although Americans are worried with regards to paying for long term care, very few prepare (Genworth, 2017). Similarly, Eurobarometer data (2007) suggests that most Europeans do not think they can, or their insurance can pay for the costs of LTC.

5.4 Rising though heterogeneous costs of care

Whilst long term care was primarily a low technology and low paid investment, costs are soaring for several reasons: the rise of minimum wages and the increasing need for skilled based carers. However, costs of care measures are not well proxied by expenditure data as they typically do not consider the costs of informal care and opportunity costs more generally, the extent to which countries exhibit unmet needs and especially different prices (Barber et al, 2021). Further to income and employment opportunities lost, care, typically comes with a wellbeing burden on mental health. Coe and Van Houtven (2009) find evidence of higher depressive symptoms among carers compared to non-carers. Similarly, Costa-Font and Vilaplana, 2022 and Costa-Font et al, 2022) document that the extension of caregiving allowances does reduce the prevalence of depressive symptoms and improves happiness among caregivers. The OECD estimates that 2.3 percent of the population uses formal LTC services on average (Colombo et al, 2011), but this varies for highly family-oriented eastern European countries such as Poland (0.2 percent), and the United States and Ireland (0.5 percent) (institutional recipients only), while high usage is seen in Austria (5.1 percent, all in the form of cash benefits), and Sweden (4.2 percent).

Figure 6. 1 Care Received by persons 65 and over with no ADL limitation

Figure 6.2 Care Mix per country by persons 65 and over



Source: TiniosP, A Lyberaki, T Georgiadis and ZValvis (2017) Tracking demand and supply for LongTerm Care inEurope2007-2015: Across-national analysis . (ESA Conference, August2017)

5.5 Family organisation and delocalisation and lack of social security

Changes in family organisation and work delocalisation affect number of countries, mostly low-and middle- income countries as these countries do not have proper social security system in place.

Case of India: India does not have enough social security programs in place for its aging population. Only about 12% of India's workforce, who are employed by central and state governments, public and private enterprises, is covered under the Employees' Pension Scheme, whereas a bulk of workforce that works in the unorganized sectors in India are not mandatorily covered under pension scheme (Census of India 2011; OECD Pensions at a Glance 2019). This leaves majority of population, post-retirement, without any pension support. Although there exist an Old Age Pension Scheme under National Social Assistance Program, it is only limited to Below Poverty Line (BPL) individuals of which only less than a third of old age BPL

individuals are the beneficiaries. In addition, this scheme provides extremely tiny financial support of less than \$3/month (INR200/month) to persons aged 60-80 and of less than \$7/month (INR500/month) for persons aged 80 and above (Ministry of Rural development - GOI 2021). Unfortunately, the scheme never adjusted for rising inflation and its effectiveness as the financial support declined continuously. For example, in order for this scheme to be as effective as it was during its inception in 1995, the financial support must be raised to \$16/month (INR1100) for persons aged 60-80.

5.6 The Catastrophic Nature of Long-Term Care Expense

Most older people in the OECD and the EU jurisdictions analysed would not be able to pay the out-of-pocket costs of care from their incomes alone without being at risk of poverty (OECD, 2020). The European Commission (2021) estimates that long-term care costs are estimated to be one-half to three times the median disposable income of people of retirement age or older. Even for as little as 6.5 hours of care per week for people with low needs, the total costs of home care would exceed half of an elderly person's disposable income. Without social protection, the cost of caring for people with moderate to severe needs would be at least equal to disposable income across all income levels.

About seven percent of bankruptcy cases in the United States involve people over age 65. These have grown significantly since the 1990s (178 percent since 1991). LTSS is one central component of the costs that drive older adults to bankruptcy (Jacoby 2011). Consumers regularly cite cost as the reason that they do not buy private LTSS insurance. For example, the average annual cost for a LTSS policy in 2015 was \$2,772 (America's Health Insurance Plan, 2017), or about 20 percent of the Social Security income for an average American over 65. Recent estimates of the willingness to pay for long-term care insurance highlight the challenges facing the market. U.S. consumers are willing to pay about 47 percent of the market price for an LTSS policy (Akaichi, Costa-Font, and Frank, 2018). The implication is that for the middle-income market premium subsidies must be on average about 50 percent of the cost of coverage in order to be viewed as worthwhile to U.S. consumers. In the US about half of adults that reach the age of 65 can expect to use some long-term services and supports before they die (Favreault and Dey, 2015). Among those who will use LTSS, the expected cost of services they will use over the remainder of their lives is estimated at \$133,700 in 2015 dollars.

6 Typologies of Long-Term Care Financing

The financing of long-term care has been quite dynamic and influenced by experiences across countries. Since the first long term care insurance system was developed in the Netherlands in 1968, there has been several countries that have developed their own financing models. Historically, two generalised models of LTC have been discernible in Europe: a universal model (coverage above 20%) such as in Scandinavia (and the Netherlands) and a residual model where coverage was generally considerably lower (below 10%) and where reliance on family care and a heavier reliance on other health services were common. This model is common in continental and Southern Europe. LTC models further range from highly integrated systems reliant on public provision with limited private alternatives, to systems with considerable family involvement together with a fragmented and residual public system (Lundsgaard 2005).

The majority of the 19 jurisdictions modelled would not cover 40% of the total costs of long-term care services for people with moderate needs (European Commission, 2021). However, there is significant heterogeneity. In four jurisdictions, public support would exceed 90 percent of total long-term care costs, while in another six jurisdictions, it would be less than 50 percent. Regardless of the severity of needs, public social protection systems in Northern Europe such as Finland, Netherlands, Finland and Luxembourg would cover nearly the entire cost of homecare.

As in health care, long term care models can be divided between those that are *nationally based* and aim at reaching the entire country and those that are *locally or regionally organised*, as well as those that aim at reaching everyone and hence aim at providing *universal access*, and those that are market based private-insurance models. Table 2 below provides a description of the different funding schemes in place in a selection of European countries.

Table 2. Description of a selection of LTC funding in some western countries

	Description
Belgium	No specific federal LTC legislation. Universal care for health (home and residential) within the health system. Predominately supports based system with cash subsidies at federal and regional level.
France	Mixed system of public and private insurance. Cash-for-care (APA) made available to all frail elderly from 2002; cash subsidies are steeply income related and capped.
Germany	Federal social insurance. The LTCI Act of 1994 established nearly universal public system mandatory except individuals with supplementary insurance which should purchase private substitutive LTCI.
Israel	Mixed system of public and private insurance, marketed through health insurance.
Japan	Universal mandatory coverage for elderly under public LTC insurance model
Netherlands	Universal mandatory system of LTC insurance -- AWBZ--created in 1968. Regional purchasing agents buy care (except home help); tied to health care system and managed by private insurance companies.
Sweden	Universal tax-based single system: Social Services Act of 1982 run by municipalities.
UK	Means tested system in England and Wales funded by local taxes and a tax funded universal system in Scotland.
Spain	Tax funded universal system, funded by a mixed of central and regional level taxes and cost sharing
US	Mix system mainly funded by a means-tested and state specific public insurance and private insurance, alongside partnership schemes

6.1 Universal or Need Test based Models

6.1.1 Social Insurance Models

This is the common model in Germany and in Japan and Korea. It entailed an expansion of national insurance to pay for LTC. The German system on the other hand offers a universal entitlement channelled through social insurance funds and a choice of both in kinds and cash subsidies. Hence, individuals can choose between a user IP and a caregiving IP. Only a needs test restricts access to care, though the benefit levels often judged to being insufficient. In

addition, means-tested social assistance plays a substantial role for people who are not able to meet the required-payments (Rothgang 2010). However, for most of the population co-financing is the norm.

LTCI was introduced in 2008 in Korea to support the expenditures of elderly individuals who needed care in nursing home and home care for the long term, including licensed caretakers. It refers on average about 10% of total health insurance premiums and pays benefits to about 8.5% of the population and the total amount of expenditures doubled between 2010 and 2017.

Compulsory social LTCI has been established in Germany, Japan, and the Republic of Korea. The Netherlands uses a mix of compulsory LTC and health insurance. Social LTCI pays for care in nursing homes, social health insurance (SHI) pays for nursing and personal care provided at home, and the Social Support Act makes municipalities responsible for organizing and financing assistive and social support for the elderly living in the community. Scotland in the UK, France, and Australia and Spain provides a tax funded system, yet in Spain and France some of such taxes are levied at the subnational level. In The US, the core of long-term care is funded by Medicaid but only lower income individuals eligible and is generally funded by a both federal and state taxes after means testing. Medicare provides universal access to health care for acute medical care, outpatient visits and skilled nursing facilities. Sweden in contract long term care is funded by subnational governments. In Germany LTCI grants access to services based on LTC needs and it is not means-tested. Everyone with LTC needs is entitled to receive the services they require regardless of age, income, wealth, personal circumstances (such as living with a carer) and medical diagnosis (whether physical or cognitive). A needs assessment recognizes whether an individual should receive benefits and the amount. Individuals have to take a needs-based, uniform assessment test, which assigns them to one out of five potential “care degrees”

Beneficiaries who opt for cash benefits (a “cash allowance”) are responsible for organizing their own LTC care. They generally rely on informal carers, mostly family members. Beneficiaries who choose cash over in-kind benefits are inspected by local care providers every half year (for care degrees 2 and 3) or quarter (for care degrees 4 and 5). This is intended to offer support and training to carers and ensure that cash beneficiaries are not abused, neglected or financially exploited. In-kind benefits are reserved for professional home care providers. Cash benefits are the most frequent support. In 2019, roughly 50% of all beneficiaries received cash benefits. Out of all beneficiaries receiving home care, 84% received cash benefits compared to 16% choosing in-kind benefits (both including combinations with other services of up to 50%)

In Japan, LTC is paid by a mandatory insurance premium for the over 40s (the age at which individuals tend to face some old age care need in their household), which is match with similar tax revenue funding, and consider a 10% user co-payment. Premiums are approximately one percent of income for those aged 40–64 years.

Entitlement is only needs tested by a medical doctor upon which a LTC board decides. However, as in Germany, the model faces issues with regards to its sustainability, and since 2000, expenditures have tripled raised from ¥3.6 trillion in 2000 to ¥10.7 trillion in 2017, could ¥15 trillion by 2025 (Plackett, 2022). To make it more affordable it has excluded meal costs from 2005, increased cost -sharing to 20% for more affluent users from 2015.

In Korea, is another example of social insurance scheme where the contribution rate for LTCI is 8.5% of health insurance premiums in 2019 (increased from 7.38% in 2018). In other words, anyone who pays NHI contribution pays LTCI contribution. The contribution is exempted for the poor. Because the NHI contribution is 6.46% of wage, the contribution for LTCI was about 0.55% of wage (6.46×8.51) in 2019. The contribution rate started at 4.05% of the health insurance contribution in 2008, increased to 4.78% in 2009, and to 6.55% in 2010-2017. Since 2017, LTCI has experienced an annual increasing deficit (Figure 1). As a result, the financial sustainability of LTCI is a serious concern. The financing mix of LTCI consists of contributions (60-65%), tax subsidies (20%), and co-payment by service users, which is 20% for institutional services, 15% for home-based services, and 15% for welfare equipment. The coinsurance rate for institutional care is higher than that for home-based care in order to promote de-institutionalization and community-based care. There is a 40% co-payment discount for those in the 25-50% income quartile and 60% discount for those in the lowest (0-25%) income quartile. Co-payment is exempted for the beneficiaries of the Medical Aid program, which is a public assistance program for the poor. Informal care is not covered by LTCI, in other words, LTCI covers LTC only when LTC is provided by formal care providers.

Singapore in 2019 has introduced a mandatory LTC coverage for all eligible adults aged 30 under a scheme known as CareShield Life ([Fong and Borowsky, 2021](#)). CareShield Life was introduced to avoid the limitations of a previous private insurance market (as discussed below). Women are required to pay higher premiums than men for identical benefits. The benefits provided under CareShield Life are modest in both absolute and relative terms. The cash pay-out of S\$600 (if claimed within a year of policy and only provides benefits when older age exhibits three ADL's or more).

In Israel, the Long-Term Care Insurance Program (LTCIP) is a social insurance administered by the National Insurance Institute (NII) since 1988. That is its mandatory, based on payroll contributions and providing home-based personal care services, and only provides supports rather than cash subsidies, and supports are delivered by multiple for-profit and not-for-profit organizations ([Asislovitch, 2013](#)). Eligibility is restricted to individuals that pass a needs test and hence exceed a specific score which accounts for existence of support in the household.

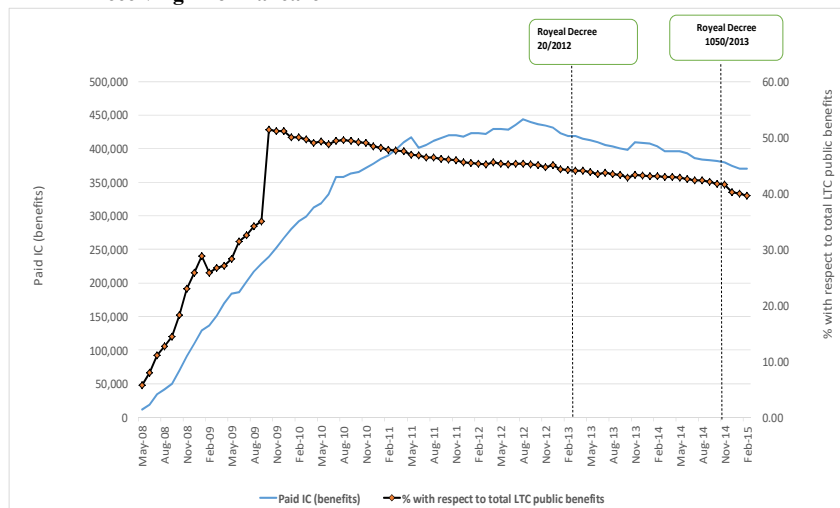
6.1.2 National and Local Tax funded models

This is the model commonly employed in Spain, Nordic countries, and the Netherlands. However, there are large differences. In Latin America Uruguay has followed a similar model. In the UK, Scotland was a pioneer in implementing the recommendation of the introduction of a public insurance scheme by the 1999 Royal Commission on Long Term Care for the UK.

The devolution of the British political system gave rise to diverging LTC systems: the Scottish system provides free home care and subsidies for nursing home care, whereas in England strict means, testing is applied ([Comas-Herrera and Pickard 2010](#)). Scotland, unlike the rest of the UK, replaced the means-tested system in the rest of the UK after the implementation of the Community Care and Health (Scotland) Act abolishing all charges for personal care at home (although charges continued in place for non-personal care), and increased the flat-rate conditional cash subsidy (attendance allowance) for personal care

compared to England. However, in the end, the overall entitlements were restricted by stringent needs tests and the overall costs of the reform were limited to about 0.2 per cent of Scottish GDP (Bell and Bowes 2006). In the rest of the UK, the extension of means testing to some form of universal entitlement has been heavily debated but with limited success. Scotland introduced the so called ‘free personal care’ (FPC) which meant that all charges only for personal care at home were abolished once an individual passed a ‘needs test’ (though charges continued in place for non-personal care). In addition, the pre-existing cash subsidy for those at home (in 2014 it entails a flat rate payment of £169 per week) and those in a nursing home (who receive an additional £77). The main evidence of the effects of the Scottish reform suggests that the introduction of FPC did give rise to a change in caregiving choices. More specifically, some evidence suggests an increase in informal caregiving by six percental points (Kalsberg-Scaffer, 2015), and a sharp increase the demand for in home help demand by 69% between 2002-2010 (Bell and Bowes, 2012), which was compensated by an increase in the charges for non-personal care, and the intensity of care increased from an average of 6.9 to 7.8. Some other evidence suggests an effect on savings (Ohinata, A., & Picchio, M. (2015)).

Figure A. Implementation of the Long-Term Care Reform (2008-2013) on the number and proportion of population receiving informal care



Source: Own work using data from the Ministry of Health, Social Affairs and Equality.
http://www.dependencia.imserso.es/dependencia_01/index.htm

Similarly, as in Scotland, Spain in its turn extended a previously means tested subsidy to the entire population upon a needs test in 2007 under the ‘Promotion of Personal Autonomy and Care of Dependent People’ which we refer to it is using the acronym SAAD, in Spanish). Although the subsidy was intended to allow individuals to have access to home and residential care, over time a significant share of the population opted for a cash subsidy designed to compensate informal caregivers (including social security contributions), which in 2011 could reach the amount of 530€ in 2011 for the most disabled population. Evidence from Figure A below shows that after the implementation of the reform the population that relies on cash benefits increased steadily to 50% until in 2012. The effects of the reform have been explored in Costa-Font *et al* (2018) and Costa-Font and Vilaplana, (2017). Overall, they suggest that the reform (SAAD) increased the probability of the uptake of informal caregiving by 31%, and an increased expenditure by 20% consistent with significant moral hazard effects of cash

payments (Costa-Font et al, 2018b) and a reduction of household savings when individuals receive cash subsidies (Costa-Font and Vilaplana, 2017). However, SAAD led to savings in the form of a reduction in hospitalisation amounting to 11% of total individual healthcare costs (Costa-Font et al, 2018a).

In Uruguay, Law 19353 of 2015, that established the National Care System (NCS). To assess care dependency, the NCS uses a standardized test/instrument called *Baremo de valoración de la dependencia*. Home care personal assistance consists of a monthly allowance for up to 80 hours. The NCS offers subsidies for in-kind benefits and pays service providers directly. Beneficiaries can choose a teleassistance provider (company) and a personal assistant, from the list of companies and assistants certified by the NCS. However, quality indicators for each supplier (company or assistant) are not published. As regards eligibility criteria for accessing services, according to the law, the NCS ensures access to all people aged 65 and over. Due to financial restrictions, however, it has meanwhile been restricted to people aged 80 and over for personal assistance and aged 70 and over for telecare is provided by natural persons who must be enrolled in an official register administered by the Banco de Previsión Social (BPS). The care workers are contracted by the beneficiary based on a contract template provided by the NCS. The contract stipulates that the beneficiary is obliged to pay social security contributions for the care workers because of a pre-established hourly remuneration. Only contracts using the specified template are valid. Teleassistance, – an alarm service that enables people to notify their family, neighbours or medical services of any incident that occurs in their home – is provided by telecommunication firms (previously authorized by the Secretariat). The beneficiaries may choose the provider. Prices and conditions are fixed and pre-established by the NCS. Day and night centers are provided by civil society organizations and funded with NCS resources and support from local governments. The NCS is financed mainly through general taxes from the central government. However, there is a co-payment (out-of-pocket), based on income, for home care and teleassistance. » 86% of beneficiaries received 100% of subsidy (0% co-payment) » 12% of beneficiaries received 67% of subsidy (33% co-payment), 1.8% of beneficiaries received 33% of subsidy (67% co-payment) » 0.2% of beneficiaries received 0% of subsidy (100% co-payment). Additionally, there is a residential care program called Cupo Cama (bed quota) which is separate to the NCS. This is conceived as a housing solution for poor pensioners, but for practical purposes it can be considered as LTC. The program is run by the BPS (Social Security Fund) and consists of a monetary subsidy of 30% to 100% of the cost of a permanent residence in an *hogar de ancianos* (house for elderly adults). Beneficiaries must be pensioned or retired and receive a pension from the BPS, with severe dependency or emotional or mental vulnerability (BPS 2019). BPS residential care (Cupo Cama) is financed by payroll taxes and co-payment (between 30% and 70% of cost). The BPS subsidy accounts for 33% of total revenue of the centers. The remaining 65% are revenues from (out-of-pocket) payments by beneficiaries or their families (BPS 2019).

In Costa Rica, the Care Support and Dependency Care System (Sistema de Apoyo a los Cuidados y Atención 86 a la Dependencia). Home-based care is established as the main service. It comprises a maximum of 80 hours per 97 month and aims at covering 80% of the needs of those with major dependency in 2021-2031. The system includes a cash-for-care scheme for specific cases. The person needs to meet the 113 following three requirements in order to be eligible: to be entitled to home-based care services, 114 to not have the possibility of joining the labor market, and to live in extreme poverty. The 115-amount allocated in these cases is not yet defined. The system is funded through general tax revenues and copayment. Its estimated cost is USD 136 235 million, which is equivalent to 0.48% GDP.

In Italy, the most common financial scheme has been the ‘companion allowance’ (CA), a cash allowance programme for individuals with severe disability, which provides support to 13.5% of the population and provides a cash transfer of 505€ in 2017 that compares in magnitude to the cash allowance defined in the Spanish SAAD (Pavolini et al. 2016). Again, like in Spain, the CA was affected by the austerity reforms as public funding for LTC services was slashed by 25% between 2005 and 2016 (Matteo et al. 2018). Only some regions such as Emilia Romagna topped up the CA with a means-tested cash allowance and expanded the support for home care. However, overall, the system has remained cash-based over time and relies mainly on informal caregivers consistently with a caregiver IP design (Pavolini et al. 2016).

In France, the late 1990s is based on a cash-for-care scheme, initially called “Specific Allowance for Dependency” concentrating on persons with very high care needs (Le Bihan and Martin 2018). The scheme was reformed in 2002 and became the personal allowance for autonomy (*Allocation personnalisée d'autonomie* - APA), providing benefits to meet personal care and assistance needs which are not covered by SHI. APA is a need- and means-tested allocation for elderly people which can be received at home or in residential care homes. It is funded both by national contributions and local taxes and managed locally by the local authorities *départements*. In 2015, 1.3 million, or 8% of the people over 60 years old benefited from this program; about 500 000 of whom were in a residential nursing homes (Leroux et al. 2017). About 60% of APA is funded by local authorities through local taxes, while 40% comes from the CNSA (CNSA 2019). The government created a new (fifth) branch of social security for LTC funding in August 2020. LTC spending was previously part of the SHI budget and financed by National Objective for Health Insurance Spending. At present, it is covered by a new branch, called “autonomy”, which is managed by the National Solidarity Fund for Autonomy. It receives a share of income tax funding from generalized social contribution to finance LTC services that was previously covered by health insurance. On January 2019, the maximum amounts paid for APA varied from €672 per month for level 4 (low dependency: help with washing and dressing, body care and meals) to €1737 per month in level 1.

The Dutch long-term care system is the oldest in Europe, and up until 2015 it was the most generous in Europe after Sweden, in part because it relied too heavily on residential care, and (Alders et al., 2015). As some other European systems, is funded by a single payroll contribution, eligibility of benefits is determined by an assessment of care need. As in the Scottish and Spanish case, the system offers both benefits in kind and cash, but in the latter case, they refer to conditional allowances that follow a detailed personal budget. However, in the aftermath of the economic downturn, the escalating costs of LTC as well as concerns about moral hazard in the system, in January 2015, the Social Support Act 2015 created a new more restricted funding scheme where the old statutory insurance (AWBZ) becomes WLZ with more limited funding and restricted to residential care and provides personal budgets (Maarse et al., 2016). Nursing care was integrated into the statutory health insurance scheme, and non-residential services are now managed by a new less generous fund (WMO), the responsibility of which is shifted to the municipalities. Two key reforms were the implementation of the Wmo (Social Support Act) and Wlz (Long-Term Care Act). These reforms resulted in the bifurcation of LTC benefits into a national system (Wlz), with regional office administration, and the municipal system. The national (Wlz) system was tasked with providing more intensive services of residential/nursing care. The municipal system was charged with providing in-kind services which were defined by the WMO,

though had freedom on how to deliver the services. The municipal (Wmo) budget was still dictated nationally, which was likely a contributing factor to the “race to the bottom” in contracting with service providers.

Although the reform was a major restricting of the funding of LTC in the Netherlands, it was significantly softened in part because reform gives rise to strategic behaviours – as the Scottish and Spanish example show- altering caregiving decisions. This is because elderly individuals often would not have adequate housing to receive care at home and, in part because the new fragmented system opens up new coordination problems that were not present in the old system (von Ginneken and Kroneman, 2015). The net effect of the reform reducing coverage has not resulted in significant savings to the system because, although 30% savings were originally envisaged, the system required additional funding (Maarse et al., 2016).

Alongside subsidy expansions, long term care services have been subject to spending cuts reducing the subsidies available in the context of Austerity. Typically, cuts have not always been transparent (e.g., expansion waiting lists to access care in Portugal and Spain), but they mostly encompass a rise in the cost sharing and private contributions. Austerity cuts have led to Ireland cut long-term care benefits between 5% and 8% (EFC, 2012), and the Czech Republic to cut its subsidy by 60 per cent in 2011 as part of emergency austerity measures (Hirose and Czepulis-Rutkowska, 2016). In Italy, spending cuts included the cancellation of the National Fund for Dependent People (long term care) worth €400 million, and in Spain, the 2012 spending cuts reduced the SAAD subsidy by 15 and 25% (Royal Decree 20/2012). Such austerity cuts in Spain lead to an attenuation a reversion of all the effects described above, namely it reduced the provision of informal care, it increases the number of hospitalisations a reduced people’s savings (Costa-Font et al 2018a, 2018b, Costa-Font and Vilaplana, 2017).

Finally, in the US a mandatory payroll tax to fund Washington state’s new long-term care program will start coming out of most workers’ pay-checks across the state in January. The insurance benefit, dubbed the WA Cares Fund, is a first-in-nation public insurance program aimed at helping older residents age in their own homes. The plan is expected to use a 0.58% payroll tax to pay up to a \$36,500 benefit for individuals to pay for home health care and an array of services related to long-term health care including equipment, transportation, and meal assistance.

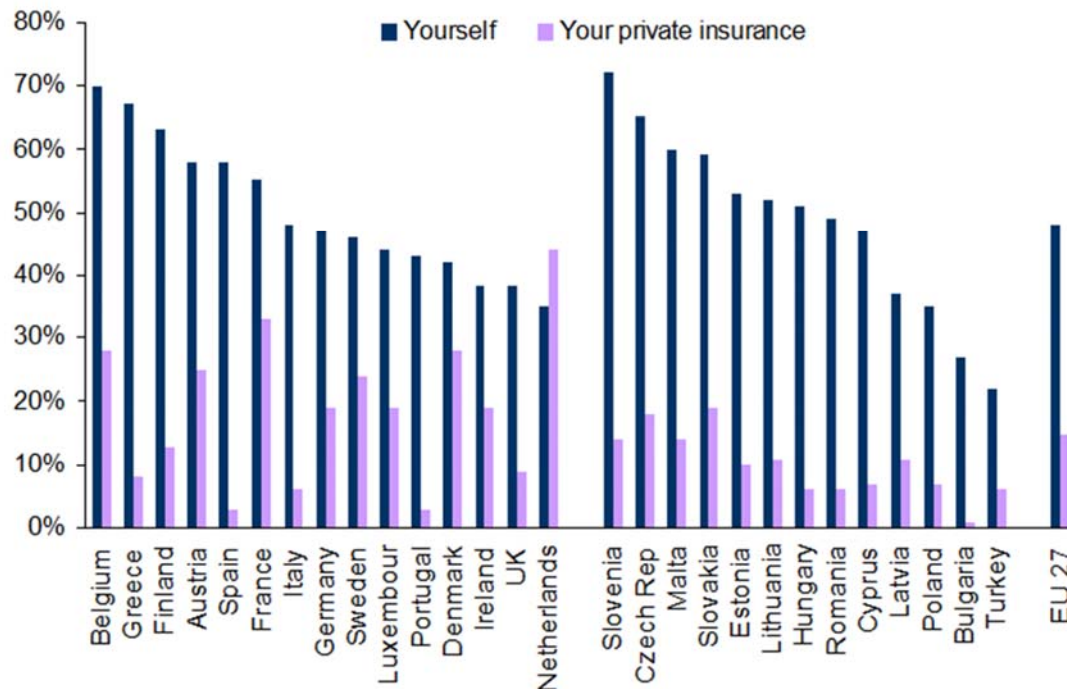
6.2 Local Means Test based Models

In some countries, the provision of long-term care is funded locally. Local authorities provide social assistance when individuals cannot fund care by themselves, as a last resort policy. This is the case of England, Italy, and many European countries where LTC is the responsibility of local authorities and is typically design as a residual ‘assistance-based’ model of care. In the US, the Medicaid program, jointly federal and state funded program serves as an insurance plan against the financial risks of long-term services and supports (LTSS). For higher-income groups they can either self-insure or, if they are healthy enough, purchase long-term care insurance on the market. People with incomes ranging from the 30th to the 60th percentile of the income distribution cannot afford private long-term care insurance and rarely have amassed enough wealth to self-insure.

6.3 Private Insurance Models

The United States has developed LTC insurance since 1974 and the market remains now at about 14% of the population. In Europe only France, Germany and Israel have developed some form of private insurance, and Singapore in Asia. Long-term care insurance in most OECD countries is incomplete, which leaves people in need of care having to rely either on public support when available and they qualify (after needs and means testing), or if they can afford it, to self-insure such needs. This is so much the case that in Europe, Figure 1 seems to suggest that except for the Netherlands, most people expect to pay for long-term care at old age.

Figure 6.3 . Who will pay for people’s long-term care?



Question: “Imagine an elderly father or mother who lives alone and can no longer manage to live without regular help because of her or his physical or mental health condition. In your opinion, what would be the best option for people in this situation?”

Source: Eurobarometer.

Insurance for long-term care is welfare improving compared to self-insurance – through precautionary savings or asset accumulation (Frank 2012). However, important demand-side factors (Brown and Finkelstein 2011) impose significant limits to the expansion of private insurance. Both public and private insurance are subject to potential problems of moral hazard. moral hazard occurs when there is an additional utilization of LTC services due to the presence of insurance (Konetzka et al. 2019). Some studies on adverse selection suggest that insurance is more likely among those who have private information of their need of care.

Some individuals misperceive the actual costs of care and are subject to a number of behavioural biases explaining limited coverage (Brown and Finkelstein 2011). However, given the potentially catastrophic and uncertain costs, pooling risks make the costs that are more predictable, however, it is debatable the extent to which the costs ought to be covered by public funds. One of the additional arguments for government support is to avoid family impoverishment resulting from catastrophic nature of some long-term care needs.

In Asia, one of the countries with long term care insurance is Singapore (ElderShield) which covers 64% of the target population aged 40 to 84 (Fong and Borowski, 2021). It was designed to protect 40s and under 70s in need of care at their old age (had three ADL's or more). Participation was voluntary and constrained to three designated commercial insurers. Both premiums (paid until age 65) and benefits (with a maximum of 400\$ for 72 months) are community rates and vary by age (Fong and Borowski, 2021). However, the experience of Singapore fell short in terms of benefits and especially 35% of the population remained uninsured. and after a review a publicly sponsor insurance schemes was introduced in 2019 CareShield Life, as a form of social insurance. Finally, in Israel an estimated 18% have commercial insurance. Marketing of insurance policies take place through health insurance.

Determinants of Public and Private Long-term Care Insurance in the US: Funding of long-term care in the US is supported by both public and private insurance availability. However, only about a quarter of LTC expenditure is financed by private-LTCI and Out-of-Pocket expenses. The remaining three quarters of LTC expenses are usually borne by public sources in which Medicaid or public-LTCI pays for more than half of this LTC expenditure. The private-LTCI market was first started in the US. The market for private-LTCI is relatively new to the world and the US now has a well-established market. However, the growth of this insurance market has been slow and stagnant since its inception. There are several factors that are responsible for the slow growth of private-LTCI uptake. Two main reasons are public-LTCI's (also known as Medicaid) implicit tax on private-LTCI and availability of informal care as well as bequest motives. On the other hand, the presence of means tested public-LTCI is not a good substitute for private-LTCI, because it increases the fiscal expenditure of the government and can only be availed after exhausting most of individual's assets. In addition, Medicaid is an inadequate consumption smoothing mechanism for most of elderly population in the US (Brown and Finkelstein 2008). Hence, the limited amount of supply of public-LTCI leads to significant welfare loss for most elderly individuals in the US. Therefore, it is important to understand the determinants of private and public LTCI in detail using extensive US data.

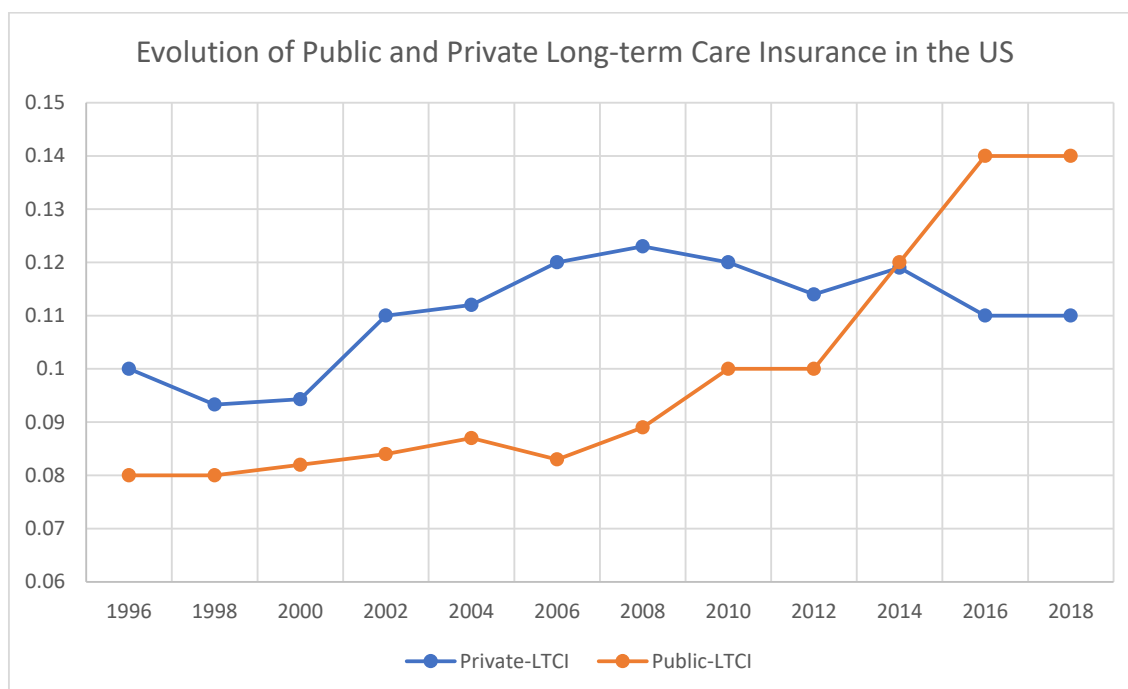


Figure 6.4 . The evolution of public and private long-term care insurance in the US (Source: health and Retirement Study, 2021).

We use Health and Retirement Survey data, from 1996 to 2018, for our regression analysis. We incorporate several socio-economic, health, and demographic identifiers into the model to understand the association between various individual characteristics and the uptake of public and private-LTCI. Table 3 reports the detailed estimates; and Figures 6.5 and 6.6 report the coefficient plot for private and public LTCI. Column 1 & 2 of Table 2 finds that having cancer increases the likelihood of purchase of private-LTCI, whereas diabetes and stroke are found to be negatively associated with the likelihood of purchasing private-LTCI and positively associated with the Medicaid or public-insurance uptake. Similarly, a White American individual is more likely to purchase private-LTCI and less likely to opt for public-insurance compared to other ethnic groups. Lastly, good health and age of the respondents are positively associated with the purchase of private insurance, whereas individuals with fair or poor health are more likely to opt for public-LTCI. One of the important determinants that we find is the partnership program, runs in collaboration with state and private insurance companies, is positively associated with the likelihood of purchasing private-LTCI. This represents that there is a need for more of such partnership programs to stimulate the uptake of private-LTCI and that such programs are crucial for the success of the market for private-LTCI. The evidence from the US can offer insights for the market for private-LTCI in the other OECD countries. It can also offer guidelines for creation and development of markets for private-LTCI in India and other low- and middle- income countries.

Table 3: Determinants of Public and Private Long-term care insurance in the US

	Age: 50 years & above	Age: 75 years & above
--	-----------------------	-----------------------

	Private-LTCI (mean=0.11; sd=0.31)	Public-LTCI (mean=0.10; sd=0.3)		Private-LTCI	Public-LTCI
	Coef (SE)	Coef (SE)	Mean (SD)	Coef (SE)	Coef (SE)
Partnership	0.013***	0.003		0.04***	0.001
	(0.003)	(0.002)		(0.006)	(0.004)
Age	0.019***	1.00E-03	67	0.026***	-0.03***
	(0.002)	(0.0012)	(11.3)	(0.01)	(0.01)
Age sq	-0.0001	-1.45E-05	4616	-0.0002***	0.0002
	(0.000001)	(8.82e-06)	(1152)	(5.74e-05)	(5.9e-05)
Male	-0.015***	-0.014***	0.414	-0.0211***	-0.004
	(0.004)	(0.003)	(0.49)	(0.0077)	(0.005)
College edu	0.064***	-0.042***	0.43	0.076***	-0.0512***
	(0.004)	(0.0023)	(0.5)	(0.008)	(0.0038)
Married	0.025***	-0.074***	0.6	0.027***	-0.054***
	(0.004)	(0.003)	(0.49)	(0.007)	(0.0043)
Income	3.35e-08**	-1.55e-08***	62754	2.41e-07***	-1.17e-07***
	(1.67e-08)	(5.94e-09)	(195698)	(5.13e-08)	(2.94e-08)
Race = White	0.0244***	-0.09***	0.77	0.05***	-0.163***
	(0.003)	(0.0045)	(0.42)	(0.006)	(0.01)
Fair/Poor Health	-0.0312***	0.0882***	0.3	-0.032***	0.06***
	(0.003)	(0.003)	(0.46)	(0.005)	(0.005)
OOP expenses	4.34e-07***	-2.03e-06***	3283	1.87E-07	-1.4e-06***
	(1.20e-07)	(1.63e-07)	(11000)	(1.63e-07)	(2.22e-07)
High BP	0.002	0.0124***	0.54	-6.40E-05	0.008**
	(0.004)	(0.003)	(0.5)	(0.007)	(0.004)
Diabetes	-0.008*	0.0241***	0.2	-0.016**	0.029***
	(0.0042)	(0.0042)	(4)	(0.0075)	(0.006)
Cancer	0.014**	-0.002	0.132	0.017**	-0.0164***
	(0.006)	(0.003)	(0.34)	(0.008)	(0.0045)
Stroke	-0.0132**	0.034**	0.085	-0.02***	0.007
	(0.005)	(0.006)	(0.28)	(0.0075)	(0.007)
Heart Disease	0.006	0.022***	0.23	0.005	0.003
	(0.004)	(0.004)	(0.42)	(0.007)	(0.005)
Smoking	-0.0164***	0.0081***	0.57	-0.022***	0.002
	(0.004)	(0.0024)	(0.5)	(0.007)	(0.005)
Drinks Alcohol	0.023***	-0.028***	0.51	0.017**	-0.028***
	(0.003)	(0.002)	(0.5)	(0.007)	(0.004)
N	200,219	199,369		50,908	50,504

Note: *, **, and *** represent that estimate are significant at 10% ($p=0.1$), 5% ($p=0.05$), and 1% ($p=0.01$) level.

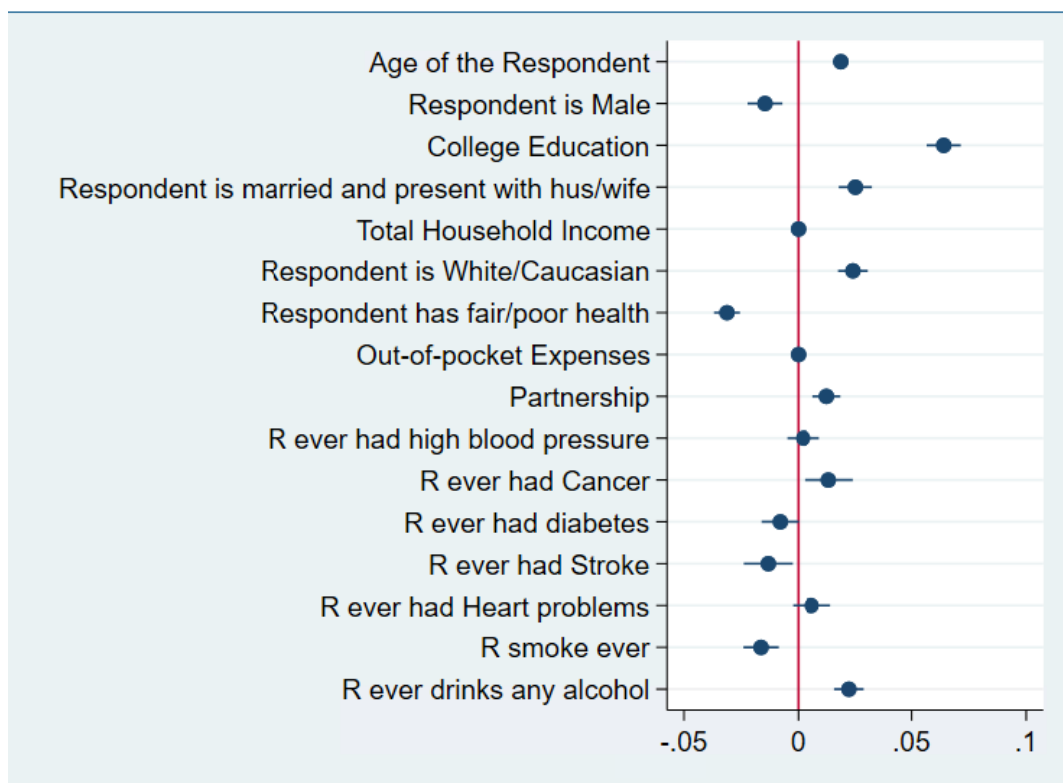


Figure 6.5 . Coefficient Plot - Determinants of Private-LTCI in the US (Source: HRS, 2021).

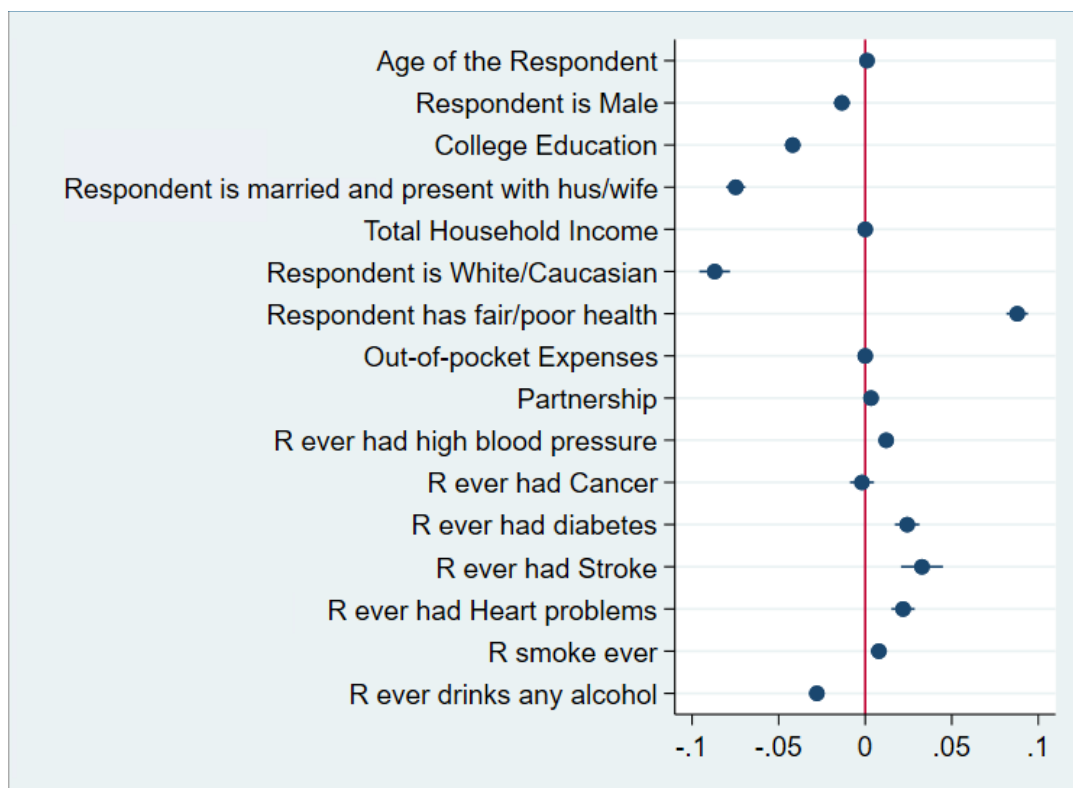


Figure 6.5 . Coefficient Plot - Determinants of Public-LTCI in the US (Source: HRS, 2021).

6.4 Self-Insurance, Reverse Mortgages and Financial Products

Housing assets have historically been the main source of non-pensionable wealth of Americans (Venti and Wise, 1991). This is especially the case for older adults: 72% of older Americans are homeowners and continue to be homeowners at older ages (ASPE, 2016). The median per capita net value (after accounting for debt) of housing assets of older adults is about \$80,000 in 2015 dollars, which amounts to 67% of the median per capita net worth of adults over the age of 65. Given that housing wealth is the most common financial source of paid care in the event of unexpected health and disability shocks, thus it is important to understand how a housing wealth shock affects individual long-term care decisions.

Using data from the 2016 Survey of Consumer Finances, Moulton and Haurin (2019) estimated that the median homeowner age 62 and older held more wealth in the form of home equity than in financial assets: \$139,000 in home equity, compared to \$101,800 in financial assets. Englehardt and Eriksen (2019) shows that elderly homeowners with a mortgage face housing expense burdens that mirror those of renters, with a growing share of retirees spending 30 to 50 percent or more of their income on housing expenses. As a results, individuals exhibiting a higher level of debt faced increased levels of stress (Haurin et al. 2019).

Some countries have developed specific financial products to pay for long term care. The problems are that they conflict with bequest motives. Hanewald et al. (2020) show that the main reason adult children in China recommend a reverse mortgage to their elderly parents is to finance complementary care services and medical treatments. In the same spirit, adult children may see insurance coverage as bringing useful and complementary services to their parents. Alternatively, children may also want to avoid to their parents the financial distress inherent to the event of needing LTC or may be worried about their parents' comfort during later life (Hanewald et al., 2020). Costa-Font et al (2010) examine evidence from Spain find that reverse mortgages interfere with bequests motives and its demand is largely influencing by education and income as opposed to the household housing assets.

6.5 Built in Incentives and Intergenerational norms

Some systems have built-in incentives to cover (or not cover) long-term care in existing benefit package (for those under public and social insurance models). In France for example, a declaration of “*longue maladie*” (a medical condition that requires long-term care) will provide beneficiaries with a 100% financial coverage from insurance fund (e.g., no co-payment on all or certain services associated with the medical condition). Similarly, in Italy the ‘*indennità di accompagnamento*’, an allowance to the death and bling that serve the purpose of a long-term care subsidy in everything but its name. Legally enforced intergenerational arrangements, such as France and Singapore mean that children have a legal obligation to take care of the needs of older age in their family. Such enacted legislation shifts the burden of LTC entirely to families, and when they exist they require family members to provide LTC to their relatives. In some countries, such as India, failure to meet these responsibilities is punishable by harsh punishment, including jail time. While the immediate family is held responsible for providing LTC in many of these countries, in African countries such as Algeria, this obligation is felt by a larger defined family. Nonetheless, whilst in the past families in some countries would have organised their systems if supports within the content of intergenerational households, house prices act as a deterrent

as it is often hard for instance in the Asian region to find dwelling to accommodate such intergenerational arrangements (Phillips and Chan, 2002).

6.6 Funding organization selected countries

Table 4 provides a summary description of the different LTC systems in a set of western countries based on how they are funded, how sustainable its funding is, whether they are run in decentralised or centralised format, and whether they include cost sharing schemes and well as the condition of contribution and eligibility. Overall, most systems rely on some form of public funding, yet they differ in the extent to which they are financially sustainable, the condition individuals are expected to cost share and what defines individual contributions and eligibility.

Table 4. Funding in a selection of European countries

	Funding	Financial Stability	Multilevel organization	Cost-sharing	Contribution/Eligibility
Netherlands	(1) Central Government Budget Funding (2) Individual tax Contributions	Med-High : trickle-down devolving budgetary pressures - developing non-residential system, depends on achievements in prevention and technology	Funds the Social Support Act Receive budget from state	Contributes to access WMO and WLZ facilities, Contribution determined by municipalities (WMO) and national level (WLZ);	Contributions takes into account income, wealth, household, age and type of care; never higher than cost so no profit
Spain	(1) Taxation - Federal and Municipal (2) Co-Payments	Med - Low demand for residential and guidelines on cash payments is good, lack of investment and unmet need leaves the future at risk	Taxes: (1) Min level, (2) Co-finance a supplement with region (1)Co-fund a supplement with central gov't, 2) Additional Level		Co-Finance Supplement; Additional level Regions can set wider benefits for residents
Poland	(1) Social Health Insurance - federal subsidies and taxation (2) Taxation (3) Cost-Sharing	Med Low -high unmet need, waiting list, family reliance and high cost-sharing; Demographics and family/cultural dynamics may support more informal	Subsidies cost of local authorities [See cell] ; Social Health Insurance - Medical Care ; General Taxes for SA	(1) Cost-sharing on Residential and home care : HC sector capped 70% of income, no family obligations, (2) SA - 70% income - supported by local gov't if not means [Private care is 100% User pay - very expensive]	Organises care; (2) Covers 50% of total cost of Specialised care to rural/smaller towns* ; Taxes for some services

Germany	(1) Long-Term Care Insurance [Public/Private]	High - Run surplus, opportunity for more risk pooling; Labour is more difficult issue	Mandatory Long-Term Care Insurance (LTCl)		If have social health, then social LTCl, if private health then private LTCl
Switzerland	(1) Health Insurance - multiple layers (2) Individual (3) Social Assistance [taxation]	Mixed (low to med/high) - Regional differences and inequalities make for instability in system which some regions are strong and rely more on home care	Health Insurance Funds (ambulatory), National Public Old Age Insurance , Invalidity Insurance Schemes - Mainly co-finances insurance 60% of healthcare is financed by Cantons	Responsible for costs of non-ambulatory - If assets/income cannot cover then go to insurance schemes and municipal social assistance	Health Insurers pay costs prescribed by DR, but seems like burden to insurers shift to local shift to person
Hungary	(1) Social Insurance - Health, (2) Taxation for Social Care (3) User Fees	Med - system is financial stable in that does not met need and supply side payer; control budget spending by controlling access	HC - Insurance, practically universal coverage ; Social Care - general taxes - part gov't	User Fees - income and real estate included in calculation (not other assets), Pay 42% of residential - smaller but growing in other areas	Local cover part of social care
United Kingdom	(1) General Taxation (2) Local Business and Property Tax (Council tax), (3) Individual payments	Low - Already failing to meet needs and downward budgetary pressures, unable to purchase or provide services	Devolved to 4 governments - England, Wales, NI and Scotland ;	Large funder of private care; Full cost of residential above certain asset, then full from local authority, assets include value of home ; means tests client charges to local authorities	Local Authorities handle social care - raised through propose and business tax ; local funds social care
Italy	(1) General Taxation (2) Individual Fees/Co-Payments	Med-Low : Large ageing population, Large areas of efficiency improvements	General Taxation - Finances CA - National Fund Manages LTC services	Fees; Co-Payments	
France	(1) Social Contributions- (including specific suppressed bank holiday) (2) Taxation (Local) (3) Personal Funding	Mid-Low - Report has numerous issues and raised similar concerns to non-Flanders Belgium on political instability and devotion with lack of real progress - Lack of real progress and demographics seem more inclined to continually devolve	Funding - (1) Social Security Funds (Social Contributions- including Solidarity Day - suppressed bank holiday) (2) Local Authorities (taxation),		

Belgium	(1)Health Insurance Scheme (Social Insurance) (2) General Revenue (3) Co-Payments (4) Income Tax credit	Med - Regional strength in Flanders (med/high) - To be discussed alongside France - and further research needed.	Health Insurance Scheme - financed by social contributions and gen gov't revenue Voucher system is direct subsidiser and also income tax credit (reimbursable) Regional- Home care, home help, residential, certain care allowance - Home care is region	Limited Co-payment for Home Nursing and Physiotherapy ; Housing and Catering costs of Residentia	
----------------	---	---	--	--	--

Source: adjusted from OECD reports.

Table 5 reports the differences in eligibility of subsidies and supports by countries, which suggests that whilst some countries have not eligibility restrictions other offer universal eligibility.

Table 5. Eligibility of publicly subsidies and supports

	Target
Belgium	All for health, personal and domestic care; 65+ cash benefits law. Universal care for health (home and residential) within the health system. Predominately service benefit with cash allowances at federal and regional level.
France	All
Germany	All
Spain	All
Israel	Men 67+, women 62+. Focus on chronically severely disabled, and private insurance, marketed through health insurance.
Japan	Over 65, or 40-64 with age-related disease coverage for elderly under public LTC insurance model
Netherlands	All; 3/4 patients are 64
Sweden	All
UK	Older and highly disabled elderly who live alone with no informal care disability allowances; means-tested social care; Scotland offer free personal care
US	Means tested Medicaid program

7 Policy Interventions across the world

7.1 Design of caregiving allowances

A 2021 survey in the US reports that 78% of family caregivers have out-of-pocket costs averaging \$7242 a year (Kerr, 2021). One response to inadequate funding, and to the reliance on informal care is to compensate caregivers for part of the financial costs they face in providing care. This includes the design of subsidies (allowances) that can serve different purposes such as compensating family members for the burden of caregiving including their opportunity costs of providing care and allowing recipients to have access to adequate care. Such subsidies either enable families to purchase care in the market and can be provider to the caregiver or the care receiver (Carmichael *et al*, 2010, Costa-Font and Vilaplana, 2017,

Costa-Font et al, 2022). In designing caregiving allowances, it is possible to distinguish conditional from unconditional allowances.

7.1.1 Conditional

Several countries have designed allowances conditional on care budgets, or receipts justifying the use of allowance. This is the case in the UK, Belgium, and the Netherlands. Cash for care schemes are also seen as attempts to enable people, who otherwise do not have means, to choose and control the services they need. Care receivers can use the care budgets to hire care and domestic help in the market, or their own family members or relative. Generally, these schemes entail a transfer to caregivers to address specific needs that are defined beforehand and take the form of an allowance and are usually justified by their increased autonomy and the consideration of the users' preferences and needs which can be heterogeneous. For instance, Germany offers a choice between formal care or cash payments as part of the national LTCL, while in the English LTC system, direct payments and personal budgets are intended to be offered to all users meeting the means test (Glendinning et al. 2008). In both systems, the cash payments can be used to fund continuous informal caregiving, as well as one-off payments for example for training. Cash-for-care was instituted in France in 2002 through the APA, however with strict restrictions on how the cash benefit is spent (Le Bihan and Martin, 2010; Doty et al. 2015). In Sweden, cash payments play a smaller role and are generally focused on young disabled rather than on the elderly with care needs. In Europe, Arntz and Thomsen (2011), using German data, show that conditional cash subsidies in the form of personal budgets increase the amount of time allocated to care for former recipients of care, but without an impact on health outcomes.

7.1.2 Unconditional

This is the common allowance design in some countries like Spain where individuals are not required to justify the use of funds. Proponents of subsidies argue that they increase care receivers' *choice and quality of care* (Linsk et al., 1992; Simon-Rusinowitz et al., 1998), and subsidies improve the flexibility of caregivers to provide personal care at home (Mahoney et al., 2002). Similarly, some studies document evidence of emotional, physical, and financial wellbeing improvements after the introduction of the Cash and Counselling Demonstration and Evaluation (CCDE) program which entailed flexible monthly allowances for Medicaid beneficiaries to hire informal caregivers as paid workers (Foster et al, 2003), and caregiving subsidies can impact on care choices and household behaviours (Ettner, 1994; McKnight, 2006)². Costa-Font et al (2022) show that whilst unconditional cash allowances increase the supply of informal care and influence intergenerational transfers, and Cost-Font and Vilaplana (2017) show that not all the allowance is spent on care, some share is saved, whilst both effects are not observed when individuals receive caregiving supports instead.

7.1.3 Tax Deductions

An alternative mechanism to assist household with the funding of long-term care is the introduction of tax deductions of expenses families undergo when providing care to their relatives. In the US, long-term care insurance premiums are tax deductible to the extent the premiums exceed 10 % of an individual's adjusted gross income (AGI). In Ireland, nursing home fees are tax deductible under the general scheme for tax relief on medical expenses

² So far, the debate on the effect of subsidies on wellbeing is unsettled (Pinquart and Sörensen 2003; Andrén and Elmståhl, 2005; Fredman et al. 2008; Calvó-Perras et al., 2018).

if the nursing home provides 24-hour on-site nursing care. Similarly, in Canada the federal and Ontario governments have tax credits available to taxpayers, including those paid for medical expenses for costs associated with nursing and retirement homes.

7.2 Design of means testing and needs testing

7.2.1 Needs testing

To qualify for LTC supports, different public and private insurance schemes requires an evaluation of needs which act as a way of monitoring the demand for funded care. Eligibility for care and the level of entitlements are typically established through a graded dependency assessment, which determine needs tests implemented in each country.

Eligibility is established through a dependency threshold to identify those persons with care needs. Once need is established, these systems also identify the level of need typically through a graded dependency assessment

In Germany, the assessment evaluates the individual's ability to manage their life independently in terms of six domains and combines the assessment into a single score between 0 and 100 points (scores in each domain are weighed differently for the overall assessment. individual is considered eligible for LTCI benefits if they require care for a period that is likely to exceed a minimum of six months

7.2.2 Means testing

Several countries consider public funding conditioned on income or wealth thresholds. This is typically the design of Medicaid in the United States, where eligibility differs by state, and access to social care in the UK which requires individuals' wealth not to exceed 23,000£. Similarly, Medicaid has a state specific means test. Discussion on means tests revolve around whether housing assets should be considered at all.

Individuals who spend down their savings on LTC can often qualify for Medicaid coverage. According a 2016 report, Medicaid spent over 20% (over \$100 billion USD) on long-term care. [Medicaid.gov: 2016 Actuarial Report <https://www.medicaid.gov/medicaid/long-term-services-supports/index.html>]

In countries that provide universal access to care based on needs, means testing is used to estimate the users' contribution to the cost of care. In Australia, residents make a means-tested contribution to the cost of their care, and this amount is deducted from the level of subsidy paid by the government. Residents pay a set rate for their basic daily services (set at 85% of the single age pension) as well as fees for any additional services that facilities may offer at market prices. For home care, an income tested care fee is applied as a reduction to the home care subsidy paid by government, with annual and lifetime caps to the out-of-pocket costs paid by individuals.

In France, the amount of the personal allowance for autonomy (*Allocation personnalisée d'autonomie* - APA) paid by the local government to meet personal care and assistance needs at home or in residential facilities is adjusted based on the income of the recipient. The full amount of the allowance is paid to individuals with a monthly income below US\$ 968,

whereas only 10% of the allowance is paid to beneficiaries with a monthly income of US\$ 3567 and above.

7.3 Role of preferences and care substitution

There are large differences across countries on preference for care, and in the extent to which formal and informal care are substitutes or complements. However, other explanations for limited coverage are behavioural as older people may be unaware of, or have incorrect perceptions of, eligibility or application procedures. Given that LTC is typically consumed later in life and is typically not a recurrent type of care, individuals often lack the experience they have in health or choice care. Other preference related barriers include the role of stigma, which in the US has been well documented with regards to Medicaid, or simply the desire to protect their privacy, and minimise external interference in household decisions.

Some evidence suggests an increase in the share of complementarity care (Geerts et al. 2011), although the effects depend on the type of services examined (Bolin et al. 2007, Bonsang, 2009). This is important as informal care might continue to play a role in complementing home health care. However, there is a chance that such complementary role might not apply when individuals are in need of more intense care which is typically delivered in nursing homes.

7.3.1 Cash subsidies

Many countries allow individuals to choose between cash subsidies, which are annual or monthly allowances to support caring needs or care supports. Subsidies have adopted different designs; in some countries, they have been presented as conditional supports on the reception of care, such as in the Netherlands and the UK, and in others, they have been designed to be unconditional allowances transferred to the care receiver without a specific pre-defined budget, such as in Spain. However, irrespective of the country examined, the expansion, or even the universalisation of long-term care refers to, access to care alone, and does not entail full financing of caregiving needs. Hence, most individuals still have to co-finance part of their care, except for those who fall behind income thresholds who qualify for additional means-tested support. In some Southern European countries, only a share of the population is allowed access to public subsidies, as support is means-tested. However, even in countries where support is universal, it is always subject to needs tests, which can be stringent, or moulded to be stronger over time. Table 4 reports the different countries that consider care subsidies in cash, most of which include such subsidies together with care supports. The exception are Switzerland and Hungary, and the UK where such subsidies are means tested. In Spain, cash subsidies have become preferred type of subsidy by almost 50% of individuals receive from the government after the 2007, and some work document that it incentivises the supply of informal care and exerts an influence on inter vivos transfers which would have been in place as a form of family insurance (Costa-Font et al, 2022).

7.3.2 Care support

Care supports refer to several hours of care that are subsidised by governments a week and vary significantly by country as displayed in Table 4. Different European countries have systems of cash and home care supports in place. However, they differ in the eligibility to

those benefits based on need and means, or in the type of subsidy included. Care supports different in the hours of care that individuals (the caregiver of care receiver) receive. Typically, subsidised care supports are contingent on the individuals needs as well as in some occasions the capacity of individuals to share the costs of care.

Table 4. Types of care subsidised

	Cash Subsidies	Care Supports (Home Care)	Care Supports (Residential)
Netherlands	Yes	Yes	Yes
<i>Limitations</i>			Need [severe]
Spain	Yes	Yes	Yes
<i>Limitations</i>			
Poland	Yes - Limited to Carers	Yes - Community & Day Care only	Yes
<i>Limitations</i>		- Clarification needed on level of home care/in-kind	
Germany	Yes - Care Allowance	Yes	Yes
<i>Limitations</i>			Excludes accommodation & food
Switzerland	No	Yes	Yes
<i>Limitations</i>			
Hungary	No	Yes	Yes
<i>Limitations</i>			
United Kingdom	No - Personal Budget relates to in-kind	Yes - Limited	Yes - NHS Nursing only
<i>Limitations</i>	Does personal budget = this		
Italy	Yes	Yes	Yes
<i>Limitations</i>			
France	Yes	Indirect - through Cash Allowance	Indirect - through Cash Allowance
<i>Limitations</i>			

Belgium	Yes - Care Allowance	Yes	Yes - w/co-payments
<i>Limitations</i>			*No copay in Flanders

Source: OECD and several sources, 2018.

7.2.4 Population receiving supports and institutionalised

Table 5 provides evidence of the share of receiving supports and the shares of the population institutionalised. Again, there is wide variation from 6% in Italy and France receiving supports to almost 17% in Switzerland. Another potential difference lies in the share of the population in institutions, which is large in Switzerland, Belgium and the Netherlands whilst is barely 1% in Italy.

Table 5. Share of population receiving supports and the shares of the population institutionalised in 2018.

Country	% of Population receiving supports	% of Population in nursing home
Italy	6.3%	0.8%
Germany	11.5%	4.1%
France	6.0%	4.1%
Spain	8.8%	2.2%
Netherlands	8.6%	4.4%
Hungary	8.9%	3.0%
Belgium	7.5%	5.9%
Switzerland	16.7%	5.7%
United Kingdom	3.5%	2.2%
Poland	1.4%	0.9%

United States	7.5%	2.4%
----------------------	------	------

Source: OECD and several sources, 2018.

7.4 Cost-sharing designs: co-payments, deductibles and under charges

In most countries' eligibility and access to long-term care, does not mean full financing as cost-sharing is comment as way to avoid the overutilisation of unnecessary care (higher intensity in the use of care), and the take of benefits that are not always required, and more generally moral hazard problems. Most individuals are expected to contribute to the financing of a non-negligible part of the costs of care often depending on people's incomes. For instance, hotel and accommodation costs alongside meals are often more included in the standard package of care of public long term care systems. Only individuals on benefits would normally receive full care converge. This gives rise to an implicit partnership between which often varies with the income of the care receiver. Co-payments typically results from some form of means testing, however, stringent eligibility both due to needs and means tested might give rise to unmet needs. Therefore, needs assessment systems should be monitored to ensure that they enable access to needed care. Most countries set levels of co-payments dependent on income, while some, including Australia, France, Spain and the USA, also consider a person's assets when determining co-payments.

In the Republic of Korea, cost sharing represents 15% of the total payment of home-based care services, but it represents 20% of facility-based payment. In Japan, 90% of beneficiaries of LTC services pay a 10% cost sharing, whereas the remaining 10% pay from 20% to 30%. Japan places a cap on the monthly amount paid, which is combined with health care services on an annual basis. In contrast, in the Republic of Korea, there is no cap, but exemptions for low-income persons. In the Netherlands, cost sharing for social assistance is €19 (US\$ 22.60) per month (in 2021), and personal care and nursing provided at home are fully paid by SHI.

In Sweden, recipients' cost-sharing represents a small part of the total costs. A ceiling is set annually by the government. Germany, the nationally defined benefits schedule is paid directly to providers of residential care. It covers part, but not all, of the negotiated price. People in need of care are invoiced for those parts of the receipt that exceed the defined coverage of the care insurance, the costs for accommodation and meals and a contribution to investment costs. The amount that an individual has to pay depends on the total cost of their care.

In the Netherlands, in 2020, income- and wealth-related co-payments were a maximum of €2419 (US\$ 2763) per month for residential care or €881 (US\$ 1006) per month for substitute care provided outside of a nursing home. In Spain, household contributions are determined by each autonomous region and differentiated according to the care setting and type of service. The extent of cost sharing depends on an assessment of financial capacity, which typically considers available capital, the estate of the beneficiary, as well as household income. Beneficiaries are expected to use no more than 90% of their income.

In Australia the Commonwealth Home Support Program (CHSP) to promote continued independent living; the Home Care Packages Program (HCP). The amount of the allowance is adjusted by the income of the recipients. For people with a monthly income below €800,

100% of the care plan is paid by the local authority. The rate of co-payments increases with income up to 90% for those with a monthly income of over €294

Similarly, systems of user charges for needed care should be formally evaluated as to whether their application results in reduced utilization and unmet need. Other designs such as the recently proposed reform in the UK, there is care cap of 86,000£ after which the government picks the bill. This means that the government's aim at covering individuals' cat trophic costs primarily. Finally, another important distinction refers to whether only personal care is publicly subsidies or insurance design include hotel expenses and meals. For instance, Scandinavian countries, or Germany do not cover such expenses which are not covered by LTCI in Korea, and extra charge is applied for private wards.

7.5 Insurance designs

7.5.1 Local Care Insurance

Although the formal long-term systems care can be allocated to a ministry or agency, e.g., Health Ministry or the Social Affairs, it tends to be a shared responsibility between various levels of government, and it is very common that local authorities have authority over the provision and as we argue below the funding of LTC services. In designing LTC insurance, a common option is to design a new insurance scheme such as Netherlands. A key characteristic of the Dutch system is the partial delegation of responsibilities: in the three financing schemes, the procurement of care and, to some extent, the financial risk, are delegated by the national government to regional purchasing offices, health insurers, and municipalities, while the budget for each type of care is determined at the national level.

7.5.2 Extension of health insurance (Israel or Medicaid)

One potential design refers to extending existing health insurance schemes to fund long term care insurance program (LTCIP). LTCIP came into force in April 1988, 7.5 years after the Knesset, the Israeli Parliament, approved an amendment to the National Insurance Act LTCIP, a program that has increased spending for LTC services for the elderly in the long run, was legislated at a time of economic austerity. At that time, from an economic point of view, it was meant to weaken the pressures for larger funding for institutional care with the promise to develop a much cheaper framework for community care ([Asiskovitch, 2013](#)).

Medicaid is a public insurance that was not intended as the main purpose of the insurance scheme. Medicaid is a state program funded by a matching federal grant that pays for 52% of long-term care spending in the United States ([Watts et al., 2020](#)), however in most states it barely pays a third or less of their low-income population with long-term care needs ([Feder and Komisar, 2012](#)), which calls for some federal initiative. This is even made worst by the covid-19 pandemic as it has significantly limited the fiscal capacity of state funding, and increases the care of primary caregivers ([Feder, 2020](#)).

Many countries manage LTC funds separately from general health funding by, for example, creating separate funding schemes or separate programs such as Australia, France, Germany, Japan, the Republic of Korea, the Netherlands and Spain). Among these countries, Germany, Japan, the Republic of Korea. A separate funding stream may help ensure that LTC funding is

not diverted to other purposes, promotes transparency in management, and enables policies specific to the LTC sector to be implemented when they may not be applicable for health services (for example, eligibility testing). However, the separation of funding for LTC and health care may pose problems in coordination across health and social care ([Barber et al, 2021](#))

7.5.3 Extensions of old age pensions and retirement plans

Finally, some approaches consider pooling the longevity risk and disability risk which work in opposite directions. This can be made operative as a cash base insurance design could be grounded on extending pension models beyond retirement into considering care needs of individuals at older ages, that is an annuity can be added to existing pension system with defined contribution. Some approaches proposed suggest combining retirement and long-term care (LTC) using cash-for-care (CFC) benefits. This design entails conditional indemnity or cash payment associated to certain level of care need ([Vidal-Melia et al, 2020](#)). Other approaches include a design that allows pensioners to defer a certain fraction of their pension income which could be used to pay for their household care needs. [Chen, 2003](#)). More specifically, [Tanaka \(2016\)](#) proposed a redesign of the Japanese pension system entailing a benefit increase that an individual's care needs.

7.5.4 Market Based Models for low- & middle- income countries

The global long-term care market is likely to expand at a compound annual growth rate (CAGR) of 8.5% between 2021 and 2027 to reach the market value of \$1.6 trillion ([Ugalmugle and Swain 2021](#)). Market for long-term care is important for India as it is expected to enter the era of aging society, in the next two to three decades, when its massive young population gradually become old. As predicted by UN's report on global aging, about a fifth of its population will be aged 60 and above in 2050 ([UN 2020](#)). Therefore, it can be expected to increase the number of diseases and co-morbidity conditions among its aging population. The prevalence of expected diseases includes diabetes, cardiovascular diseases, cancer, chronic depression, dementia, and Alzheimer's diseases, which are likely to shoot up the demand for long-term care services and supports in the country. Government alone is not capable enough to bear such a large expenditure burden of its aging population. In addition, there are funding limitations due to lack of fiscal capacity unlike developed countries. Thus, the complete reliance on the government is not sustainable and can lead to a policy failure. The creation of market for formal long-term care is a key to address the issue of unmet needs and paves a way for sustainable infrastructure for long-term care support and services in the country.

Market for Home and Community Based Services. The existing institutional healthcare infrastructure in India is amongst the worst in the world. The recent administrative data from world bank indicates that India has, for every 1000 people, only 0.53 hospital beds, 0.86 physicians, 1.7 nurses, and 0.5 community health workers ([World Bank 2021](#)). This level of infrastructure is worse than most of Sub-Saharan countries. The already insufficient existing healthcare infrastructure in the country remain in no position to account for institutionalized long-term care support and services. One of the possible alternatives would be to encourage the development of market-based home and community care services. It will reduce the load on hospitals as well as already shrinking proportion of informal caregivers in the country. The

recent disruption in the functioning of healthcare system in the country induced the demand for home-based healthcare services in the big cities, which paved way for multiple start-ups in the country including Apollo Homecare, Care24, Nightingales, HealthCare at Home (HCAH), and Portea to name a few. On the broader level, integrating long-care services and supports with existing home healthcare packages that companies offer would be a great leap towards promoting home based long-term care services in the country. The growth of this market can potentially bring down the cost of long-term care services to almost half as compared to institutional care due to the very fact that care providers can utilize existing infrastructure available at patients' residence. In addition, the creation of community-based care facilities at local level through public and private partnership can help leverage the popularity of formal care among its individuals.

Private care home facilities. Last decade has witnessed growing trend in India for private-care facilities for elderly, especially in big cities. However, the existing number of facilities is meagre and not in proportion with the number of people likely be needing it. India's economic growth post liberalization helped expand the middle class, leading to rise in disposable income at hand which also increased the health and care spending at individual level. Stimulating the market for private assisted living facilities can help address the issue of unmet needs elderly population in the country.

Introduction of Private Long-term care insurance. The strategic purchase of private long-term care insurance (LTCI hereafter) guarantees the coverage of costs of long-term care services and supports needed for elderly individuals when they are not capable of carrying out day to day activities on their own. The private-LTCI is an insurance product that is an alien to Indian insurance market. Both Government and insurance companies can play a key role of promoting the purchase of private-LTCI among the masses in India and can help spread awareness about this insurance product. Given that home care market is likely to boom in India, it can help stimulate the purchase of private-LTCI as this insurance can offer both home care as well as institutional care. To begin with, the private-LTCI can be introduced in metro cities to establish its roots in the country and encourage society to purchase private-LTCI as a safety valve against the future long-term care costs.

7.6 Role of technology

Telecare and different tools to provide support for older individuals in needs of care are increasingly tested and available. Concerns have been raised about their cost-effectiveness yet new designed encompass lower costs and rely increasingly on ICT's. However, COVID-19 has changed individuals' perception on the role of telecare, as the age specific digital divide has been closed, which has effectively allowed ways of making sure individuals are tracked, and in some cases, they can be used in combination with other forms of care to make sure that needs are met. The use of technology to monitor patients can reduce the number of workers needed during night shifts. The use of ICT for documentation can reduce the time spent on 'paperwork,' allows caregivers to focus on core care tasks and contribute to better working conditions and care quality (European Commission, 2021).

7.7 Integration and Coordination of health and social care

7.7.1 Care Integration of services

Individuals who require long-term care services typically need a series of primary, acute, post-acute, and palliative services at different times. The coordination of these different services has become a major issue in many health systems. [Holland, Evered and Center \(2014\)](#) finds that elderly individuals with access to LTC at the end of life incurs lower medical costs of around 18% for pharmacy and outpatient and 38% for inpatient costs.

Health systems that are predominantly designed for acute diseases and are generally poorly prepared for the proliferation of chronic diseases. Indeed, chronicity makes health systems highly specialized, although they do not always have a preparation to face the heterogeneity of demands for health and social care packages, which entail significant expenses in public health when they are not addressed ([Costa-Font et al, 2018](#)).

The organizational separation of health services and care is one of the main causes of fragmentation (a phenomenon whereby services are organized and financed by different organizations subject to different rules) in the provision of social services throughout the world; This represents a concern for the development of "external" integration (as opposed to "internal" or structural). The concern for fragmentation generally centers on the lack of coordination of services for individual patients and, in particular, the structural and cultural isolation of physicians and caregivers, leading to users experiencing discontinuity in care when they are transferred from home to hospital, or vice versa. This can affect quality, value of care, efficiency and the cost.

This has opened the door to the development of a wide range of interventions and organizational models, and in general pursues the triple objective of integrated care is to improve the health and well-being of the population, improve the user experience of services, improve the efficiency of social and health services

7.7.2 Coordination between financing streams

Coordination might be included by incentives such as evidence from the Korea which shows the difficulties. One question for the Ageing team is whether they should be recommending a separate funding stream. Cost-shifting occurs for reasons beyond the fragmentation of financing across programs. For example, the high rate of 30-day hospital readmissions from Medicare financed skilled nursing facilities is an example of poor coordination within the Medicare program.

In Korea, coordination problems between health care and LTC are also associated with weak primary care, dominant private providers, and separate insurance (with separate payment) for health care and LTC. Similarly, in the Netherlands, the separate financing of institutional care, nursing and personal care and social support and assistance also generates coordination problems, because these services are now purchased by different entities serving different populations and having different incentives. Cooperation and coordination between regional purchasing offices, health insurers and municipalities are very difficult to organize, which is perceived as a major problem

In Germany, *Gesundes Kinzigtal's Integrated Care* model is to encourage greater integration of care and reduce health care costs through an innovative financial model by which health care providers are encouraged to emphasize prevention and health promotion, as well as

improving care coordination. Financial incentives from key vendors are tied to performance indicators, and vendors also receive a share of company earnings based on individual performance.

In Canada there have been several initiatives such as the CHOICE program implemented in Alberta in 1996 that integrates medical and social care through the provision of transportation, day centers, social and health services and the SIPA program (Integrated Services for the Elderly) in Quebec, a program that uses community primary care services to integrate health and social services, acute and long-term care. and community and institutional services such as hospitals and nursing homes. These three projects focus on integrating care for the frail elderly and pursue cost savings and efficiency gains for providers, higher quality for clients, and better health outcomes.

7.7.3 Coordination between administrations and stakeholders

Coordination challenges may result where financing services is done by different levels of government, and in particular, local governments. In the UK, one of the traditional reasons for such limited coordination is asymmetric jurisdictional functional allocation. Social assistance has traditionally been a local responsibility, subject to needs / means tests, while healthcare is provided by regional governments and is free when needed, except for pharmaceutical co-payments. The other main reason for limited coordination lies in the chronic underfunding of social care. Different regions have developed health and social assistance coordination plans. However, the benefits of coordinating health and social care only materialized when the lack of funding was corrected.

In addition to complexities in the coordination of different levels of authority, in several Asian countries such as Hong Kong or Singapore it is possible to observe difficulties in the coordination of care activities with NGO's and for-profit organizations. Coordination between different institutions and sectors is crucial but frequently the incentives are not aligned. One way to address this challenge is by creating interministerial committees, as it has been the case of Singapore (Phillips and Chan, 2002).

7.8 Quality and Purchasing

In community care, the services are not directly purchased by those who are eligible but by the care manager agency chosen by the beneficiary. The care manager draws a care plan based on the client's preferences and needs and the services available. If the client agrees to the plan, the care manager contracts providers and coordinates services for her client. In complex cases, the care managers are responsible for organizing care conferences attended by all providers, but in practice, they are seldomly held.

A few countries consider differences in quality in their payment systems because of the lack of data, heterogeneity in relevant outcomes, and difficulty in measuring and monitoring quality in LTC - particularly given the range of settings where LTC services are provided from institutions to home care. Quality in LTC is particularly difficult to measure and monitor, given the diversity of providers and institutions involved in care provision. A few countries, however, do take quality into account in their pricing and payment systems. A few

examples are noted here. In the Netherlands, additional funding for quality improvements of nursing homes based on lump-sum funding is distributed across care providers. The regional purchasing offices distribute these funds across providers based on mandatory quality plans.

As for quality of care, periodic quality assessments are made publicly available in Australia, Germany and the Republic of Korea. In the Netherlands, nursing home and home care providers (offering personal care and nursing only) are required to report information online about patient-reported metrics. Sweden and the USA publish online comparative quality indicators to facilitate patient choice of providers at the local level.

To assure quality of care in the LTC sector, the Korean NHIS implemented a quality evaluation system in 2009. The number of quality indicators varies by type of service provider, and indicators are grouped into five domains, namely management of institutions, environment, and safety, guarantee of rights of beneficiaries, process, and outcome. Evaluation scores are disseminated through an official LTCI website, and high-performing institutions have received 1%–2% additional payments (Jeon and Kwon 2017). Sweden has made use of financial incentives for better performance, and there have been occasions since 2010 when governments in connection with the transfers from the state to the municipalities have included performance targets based on outcome results for the care of older persons. The *Ädelreformen* reform, the Law on System Choice in the Public Sector, and the use of conditional budget transfers have created an environment where providers' performance is encouraged through incentives for providers to compete, for users to choose across providers, and for municipalities to deliver value and quality.

In the Netherlands, in a recent evaluation of the provider-insurer contracts, the Dutch Healthcare Authority concluded that there are hardly any specific agreements about quality, innovation, or prevention (Barber et al, 2021). One reason for this is that health insurers do not gather data on these topics and do not possess a set of relevant, reliable, and comparable quality indicators about nursing and personal care. health insurers are responsible for the procurement or reimbursement of nursing and personal care. To that end, health insurers conclude contracts with providers of care about the conditions of care delivery or reimburse (part of) the cost of non-contracted providers. The government sets an overall budget for nursing and personal care based on a national agreement with the representative associations of providers and insurers.

7.9 Paid and Unpaid Leaves

Statutory leave for carers of dependent older people, as well as flexible work arrangements, are much less widely available than similar leave to care for children. Of the EU28 countries, 22 offer employees some sort of statutory care leaves to look after dependent older relatives, which are short in time when they are paid, but can last between 2 to 4 months when they are unpaid. In the Netherlands, part of the income forgone by reducing working hours may be paid by the state (Rodrigues et al, 2013). Paid Leave for adult care is far less common than for childcare, though evidence from the US Bipartisan Policy Center (2020) finds that 23 out of 38 countries do have some policies on this front. Braga et al (2022) find evidence that paid family leaves exerts an effect on the probability to return to work. Hence, this policy can play a role in helping ameliorate the personal and financial costs of the provision of care.

8 CONCLUSIONS

8.1 Summary

This report has summarized the trends, issues and typologies of long-term care financing design around the globe. We have argued that there is an important set of reasons for government interventions including unmet needs and access to care, as well as limited affordability of long-term care services. The evidence presented in the report suggests unambiguous evidence of the weakening of traditional caregiving supports, that gives rise to a thread of unmet needs around the world. Neither the family nor the market seem to spontaneously be able to revert the trends, which calls for the need of public intervention to finance and organize systems of care.

8.2 Policy recommendations

One way to think about long term care financing is in terms of the design of a partnership, which refers to some form of explicit or implicit agreement between the family, the state and the market in the take up of their ‘shared responsibility’ in paying for long term care. The set-up of a public and private partnership, where public funding deals with catastrophic risks and private funding and means tested public funding for non-catastrophic care has been proposed in several insurances in the US (Cohen et al, 2018), and in the UK (Dilnot, 2011).

The default of no action is not an option as the defaults of unmet needs and traditional caregiving models limit’s productivity of caregivers and exerts inefficiencies in the allocation of human resources, creates significant strains on the health system to strain including bed blocking hospitals, diminishing wellbeing of overburdened caregivers who might overuse the health system and a number of unfairness such as gender inequality and more generally ethical concerns resulting from limited dignity of a life with unmet needs

- Subsidy design and target populations: in keeping with the principles set out earlier, we focus subsidies on moderate- and middle-income households
- The coverage would involve a two-year benefit that offers \$100 per day of coverage for LTC once an individual experiences two deficits in activities of daily living

8.3 Policy proposals

Policy programs can include several initiatives in higher income countries:

- **Tax based subsidization and extension of the network of supports** in collaboration with family provision of care which is the default type of care in many lower income countries. Subsidies should be adjusted to the specific needs, means and characteristics of the countries they are designed for.
- **The development of a comprehensive and universal social or tax based insurance-based scheme to pay for care** (in the US this is defined as Medicare part E, and in Europe such schemes are already available in Germany, Spain, in Scandinavian countries and the Netherlands, and Japan and Korea’s systems would fall in this category too) to pay for over catastrophic costs after a waiting period, which could be complemented with private insurance and social support by local authorities for lower income individuals. Such a mandatory or quasi mandatory (default option) program would overcome problems of affordability for low and middle income families in paying for LTC and adverse selection, namely, when people that are more likely to

benefit from LTC will take up insurance. This proposal could be made financially possible if social insurance pay for the catastrophic part of the costs and insurance the pays for the rest as discussed in Cohen et al (2018).

- **Integration of long-term care in the existing organization of health system following the model of the Veteran administration in the US or health insurance designs in Israel.** This proposal can take different formats including an extension to rehabilitation for care needs after health episodes. This kind of proposals entail as an extension existing experience of coordination and integration of health and long-term care insurance programs in several European countries including the United Kingdom and extending the coverage of Medicare to cover long term care. The disadvantage of this proposals lies in its financial sustainability and the effect it would have on the size of the health sector in different countries.
- **The development of a publicly sponsored network of home and community (day care) services and telecare** along the lines of experiences of replicating childcare in settings of intergenerational households such as rural India, with schemes partially subsidies by government tax deduction and employers' contributions, as well as flexible working times alongside employment leaves. This can ease the time and financial constraints that caregiver in many countries face.
- **The expansion of retirement or disability insurance schemes** that cover the costs beyond employment on long term care as disability at older age. Consistently, the U.S. Senate Commission on Long-Term Care (2013)'s final report suggests putting together legislation to allow retirement account withdrawals to purchase LTCI, the design of life and LTCI policies and extend the Long-Term Care Partnership Programs that allow LTCI enrollees to qualify for Medicaid without spending down financial assets.

It is possible to devise a series of solutions in low- and middle-income countries such as India as follows:

Elderly care scheme (Anganwadi kind of scheme). (Anganwadi or 'courtyard shelter' is a scheme started in 1975 to curb child hunger and malnutrition in rural India. It operates under the Ministry of Women Development and Child Welfare, Government of India. The main objective of the scheme is to provide basic health care services at the village level. The scheme operates more than 1.33 million centres all over India. The activities carried out by Anganwadi centres include supplementary nutrition, health awareness, counselling and distribution of contraceptives, and pre-school education activities. The centres also developed into carrying out other important activities such as general health check-ups, vaccination, and other public health related activities. Although the scheme is at the centre of growing criticism due to lack of budgetary provisions and no resourcefulness, it is an important part of public health infrastructure in India that has a major presence at minor/local levels.)

The Anganwadi centres can provide a launching pad for elderly care schemes to be implemented at grass root level in India. With minor infrastructural adjustments, the existing Anganwadi centres can be extended to accommodate elderly care centres at the village level. Like the Anganwadi scheme, the scheme can be designed such that a team of workers can be formed at a village/a cluster of villages level under the leadership of a worker-in-charge or captain. A team must be trained under the specified guidelines mentioned under the scheme to provide necessary and quality care to frail and elderly patients. Subsidized care can be given to people belonging to lower socio-economic strata of society as well as below poverty level individuals, who are otherwise unable to afford care services and usually go without care if not

supported. The financing of the scheme can work in two ways. The workers of the scheme can either be placed on the payroll decided under the scheme or be paid by the care receivers on an hourly basis as per the guidelines mentioned under the scheme. Each trained worker will be issued a certificate to be identified as a recognized care worker before being employed under the scheme. The presence of such a scheme will bring awareness to society about healthy aging and help mitigate unmet needs that are likely to grow due to a reduction of informal care provisions available at the family or village level. The workers of the scheme will maintain the digital record of each assigned patient/individual while providing care to ensure the delivery of quality care. Such a scheme is a need of an hour as India is already witnessing the increase in migration of manpower to cities and prevalence of chronic diseases.

Retirement home.

Public funded Nursing Homes.

- Development of telecare which is especially relevant for individuals that with such support can live an independent life
- Development of voucher schemes to be redeemed for care received at home

8.4 Limitations and need of further evidence

The evidence of long-term care supports, and subsidies is limited. This is because of the evidence common often form a few numbers of countries which have good evidence form surveys and publicly available statistics. However, the increasing attention by both national and international organisation is changing this perspective.

REFERENCES

AARP (2020). Caregiving in the U.S. 2020: a focused look at family caregivers of adults age 50+. November 2020. Available at www.caregiving.org/wp-content/uploads/2021/05/AARP1340_RR_Caregiving50Plus_508.pdf

Ajay, S., Kasthuri, A., Kiran, P., Malhotra, R., 2017. Association of impairments of older persons with caregiver burden among family caregivers: Findings from rural South India. *Archives of Gerontology and Geriatrics* 68, 143–148.
<https://doi.org/10.1016/j.archger.2016.10.003>

Alam, M., James, K.S., Giridhar, G., Sathyanarayana, K.M., Kumar, S., Siva Raju, S., Syamala, T.S., Subaiya, L., Bansod, D., 2012. *Report on the Status of Elderly in Select States of India*, 2011. The United Nations Fund for Population Activities (UNFPA), India.

Albertini, M., & Pavolini, E. (2017). Unequal inequalities: the stratification of the use of formal care among older Europeans, *The Journals of Gerontology: Series B*, 72(3), 510-521

Asiskovitch, S. (2013). The Long-Term Care Insurance Program in Israel: solidarity with the elderly in a changing society. *Israel Journal of Health Policy Research*, 2(1), 1-19.

- Barber, S. L., van Gool, K., Wise, S., Wood, M., Or, Z., Penneau, A., ... & Lorenzoni, L. (2021). Pricing long-term care for older persons. World Health Organization and the Organisation for Economic Co-operation and Development, 2021
- Bakx, P., Meijer, C., Schut, F., & Doorslaer, E. (2015). Going formal or informal, who cares? The influence of public long-term care insurance. *Health economics*, 24(6), 631-643
- Bell, D., & Bowes, A. M. (2006). *Financial care models in Scotland and the UK*. York: Joseph Rowntree Foundation.
- Bergquist, S., Costa-Font, J., & Swartz, K. (2015). Long term care partnerships: Are they ‘fit for purpose’? CESifo working papers, 5155. CESifo Group, Munich, Germany.
- Bettio, F., Verashchagina, A., 2009. Fiscal system and female employment in Europe. EU Expert Group on Gender and Employment (EGGE).
- Bhalla, S., Kaur, R., 2011. Labour force participation of women in India: some facts, some queries. LSE Asia Research Center, London School of Economics and Political Science, London, UK.
- Blomqvist, Paula. (2004). The choice revolution: privatization of Swedish welfare services in the 1990s. *Social Policy & Administration*, 38(2), 139–155
- Bloom, D.E. and Eggleston, K.N., 2014. The economic implications of population ageing in China and India: Introduction to the special issue. *The Journal of the Economics of Ageing*, (4), pp.1-7.
- Bolin, K., B. Lindgren and P. Lundborg. (2007). Informal and formal care among single-living elderly in Europe. *Health Economics* 17(3): 393-409.
- Bonsang, E. (2009). Does informal care from children to their elderly parents substitute for formal care in Europe? *Journal of Health Economics* 28: 143-154.
- Braga, B., Butrica, B. A., Mudrazija, S., & Peters, H. E. (2022). *Impacts of State Paid Family Leave Policies for Older Workers with Spouses or Parents in Poor Health* (No. 15007). Institute of Labor Economics (IZA).
- Brenna, E., Di Novi, C. Is caring for older parents detrimental to women’s mental health? The role of the European North–South gradient. *Review of Economics of the Household* 14, 745–778
- Brinda, E.M., Rajkumar, A.P., Enemark, U., Attermann, J., Jacob, K., 2014. Cost and burden of informal caregiving of dependent older people in a rural Indian community. *BMC Health Services Research* 14. <https://doi.org/10.1186/1472-6963-14-207>.
- Burwell, B., Sredl, K., and Eiken, S., “Medicaid LongTerm Care Expenditures FY 2005,” Medstat, 2006.
- Carmichael, F and Charles, S, 1998, “The labour market costs of community care”, *Journal of Health Economics*, vol. 17, pp. 747–765.

- Carmichael, F and Charles, S, 2003, "The opportunity costs of informal care: does gender matter?", *Journal of Health Economics*, vol. 22, pp. 781–803
- Carmichael, F., Charles, S., Hulme, C., 2010. Who will care? Employment participation and willingness to supply informal care. *Journal of Health Economics* 29, 182–190.
- Census of India, 2011. Census of India 2011 - POPULATION COMPOSITION.
- Chari, A. V., J. Engberg, K. N. Ray, and A. Mehrotra (2015). The opportunity costs of informal elder-care in the united states: new estimates from the American time use survey. *Health services research* 50(3), 871–882.
- Chatterjee, U., Murgai, R., Rama, M., 2015. Job Opportunities along the Rural-Urban Gradation and Female Labor Force Participation in India. *Policy Research Working Paper, World Bank Group & Office of The Chief Economist South Asia Region*, September 2015, WPS7412.
- Chen, Y.-P. (2003) Applications of the trade-off principle in both public and private sectors. *Journal of Aging and Health*, 15(1): 15–44
- Chowdhury, S., 2011. Employment in India: What Does the Latest Data Show? *Economic and Political Weekly* 46.
- Choi JW, Park EC, Lee SG, et al. 2018. Does long-term care insurance reduce the burden of medical costs? A retrospective elderly cohort study. *Geriatrics & Gerontology International* 18: 1641-1646.
- Cohen, M., Feder, J., & Favreault, M. (2018). A new public-private partnership: Catastrophic public and front-end private LTC insurance. The Urban Institute. https://www.umb.edu/mccormack.umb.edu/uploads/gerontology/Public_Catastrophic_Insurance_Paper_for_Bipartisan_Policy_Center_1-25-2018.pdf
- Coe, N., van Houtven, C. (2009). Caring for mom and neglecting yourself? The health effects of caring for an elderly parent. *Health Economics* 18, 991-1010.
- Costa-Font, J., & Zigante, V. (2020). Building ‘implicit partnerships? Financial long-term care entitlements in Europe. *Policy Sciences*, 53(4), 697-712.
- Costa-font, J., Courbage, C., & Swartz, K. (2015). Financing long-term care: ex ante, ex post or both?. *Health economics*, 24, 45-57.
- Costa-Font, J. (2010). Family ties and the crowding out of long-term care insurance. *Oxford Review of Economic Policy*, 26(4), 691–712.
- Costa-Font, J., Jimenez-Martin, S., & Vilaplana, C. (2018). Does long-term care subsidization reduce hospital admissions and utilization? *Journal of Health Economics*, 58, 43–66.

- Costa-i-Font, J., D'Amico, F., & Vilaplana-Prieto, C. (2022). Caring for Carers? The Effect of Public Subsidies on the Wellbeing of Unpaid Carers. *American Journal of Health Economics*, in press.
- Costa-Font, J., Jiménez-Martín, S., & Vilaplana-Prieto, C. (2022). Do public caregiving subsidies and supports affect the provision of care and transfers?. *Journal of Health Economics*, 102639.
- Costa-Font, J., & Vilaplana-Prieto, C. (2022). Mental health effects of caregivers respite: subsidies or supports?. *Journal of the Economics of Ageing*.
- Costa-Font, J., & Vilaplana-Prieto, C. (2022b). Caregiving subsidies and spousal early retirement intentions. *Journal of Pension Economics and Finance*, in press.
- Costa-Font, J., Gil, J., & Mascarilla, O. (2010). Housing wealth and housing decisions in old age: sale and reversion. *Housing studies*, 25(3), 375-395.
- Colombo, F., et al. (2011), *Help Wanted?: Providing and Paying for Long-Term Care*, OECD Health Policy Studies, OECD Publishing, Paris, <https://doi.org/10.1787/9789264097759-en>.
- Da Roit, B., & Le Bihan, B. (2010). Similar and Yet So Different: Cash-for-Care in Six European Countries' Long-Term Care Policies. *The Milbank Quarterly*, 88(3), 286–309.
- Da Roit, B., & Le Bihan, B. (2019). Cash for long-term care: Policy debates, visions, and designs on the move. *Social Policy & Administration*, 53(4), 519–536.
- Dasgupta, I., Centre for Studies in Social Sciences, India, Indian Statistical Institute, India, 2018. The labor market in India since the 1990s. *IZA World of Labor*. <https://doi.org/10.15185/izawol.425>
- Dorling, D., 2021. World population prospects at the UN: our numbers are not our problem? *The Struggle for Social Sustainability: Moral Conflicts in Global Social Policy*, p.129.
- Doty, P., Nadash, P., & Racco, N. (2015). Long-Term Care Financing: Lessons From France. *The Milbank Quarterly*, 93(2), 359–391.
- Di Novi, C., Jacobs, R., & Migheli, M. (2015). The Quality of Life of Female Informal Caregivers: From Scandinavia to the Mediterranean Sea. *European Journal of Population*, 31(3), 309-333.
- Ettner, S. L. (1994). The effect of the Medicaid home care benefit on long-term care choices of the elderly. *Economic Inquiry* 32(1), 103–127
- European Commission (2021). Long-term care report. Trends, challenges and opportunities in an ageing society. Luxembourg: Publications Office of the European Union, 2021

- Favreault, M, H Gleckman, and RW Johnson. 2015. "Financing Long-Term Services and Supports: Options Reflect Trade-Offs for Older Americans and Federal Spending." *Health Affairs* 34(12): 2181- 91.
- Feder, J. (2020). COVID-19 and the future of long-term care: The urgency of enhanced federal financing. *Journal of Aging & Social Policy*, 32(4-5), 350-357.
- Feder, J., & Komisar, H. (2012). The importance of federal financing for long-term care. Georgetown University.
https://www.thescanfoundation.org/sites/default/files/georgetown_importance_federal_financing_ltc_2.pdf
- Feng J, Wang Z, Yu Y. 2020a. Does long-term care insurance reduce hospital utilization and medical expenditures? Evidence from China. *Social Science & Medicine* 258: 113081.
- Flaherty JH, Liu ML, Ding L, Dong B, Ding Q, Li X, Xiao S. China: The aging giant. *Journal of the American Geriatrics Society*. 2007;55:1295–1300.
- Fong, J. H., & Borowski, A. (2021). Long-Term Care Insurance Reform in Singapore. *Journal of Aging & Social Policy*, 1-18.
- Frank, R and Meg Wiehe (2020). Lessons for State Financing of Coverage of Long-Term Services and Supports (LTSS).
- Goldin, C., 1994. The U-Shaped Female Labor Force Function in Economic Development and Economic History (No. w4707). National Bureau of Economic Research, Cambridge, MA. <https://doi.org/10.3386/w4707>
- Grabowski, D., 2014. Encyclopedia of Health Economics - Long-term care (No. ISBN 978-0-12-375678-7), Volume II. *Encyclopedia of Health Economics*, Amsterdam.
- Geerts, J. and K. van den Bosch. (2012). Transitions in formal and informal care utilisation amongst older Europeans: The impact of national contexts. *European Journal of Ageing* 9(1): 27-37.
- ILO, 2016. India Labor Market Update: ILO Country Office for India.
- Kalirajan, K., Singh, K., 2010. Economic liberalisation strategies and poverty reduction across Indian states: ECONOMIC STRATEGIES AND POVERTY REDUCTION. *Asian-Pacific Economic Literature* 24, 26–42. <https://doi.org/10.1111/j.1467-8411.2010.01248.x>
- Kannan, K.P., Raveendran, G., 2012. Counting and Profiling the Missing Labour Force. *Economic and Political Weekly* 47.
- Kerr N (2021). Family caregivers spend more than \$7,200 a year on out-of-pocket costs. AARP. 29 June 2021.

- Khan, N.A., Chowdhury, S., 2013. Trade Liberalization and Poverty: An Indian Perspective. *The IUP Journal of Applied Economics* Vol. XII, 66–77.
- Kim H, Kwon S, Yoon N-H, Hyun K-R. 2013. Utilization of long-term care services under the public long-term care insurance program in Korea: Implications of a subsidy policy. *Health Policy* 111: 166-174.
- Kim HB, Lim W. 2015. Long-term care insurance, informal care, and medical expenditures. *Journal of Public Economics* 125: 128-142
- Jacoby, M. B. et al. 2011. “Coping with Adversity: Personal Bankruptcy decisions of Lower Income Homeowners.” Working Paper. University of North Carolina Law School.
- Hanewald, K., Bateman, H., Fang, H., & Wu, S. (2020). Is there a demand for reverse mortgages in China? Evidence from two online surveys. *Journal of Economic Behavior & Organization*, 169, 19-37.
- Holland, Stephen K., Sharrilyn R. Evered, and Bruce A. Center. 2014. Long-Term Care Benefits May Reduce End-of-Life Medical Care Costs. *Population Health Management*, 17(6): 332-339.
- Karlsson, M., Iversen, T. et al. (2010). Scandinavian long-term care financing. Health Economics Research Programme Working Papers, University of Oslo.
- Klaassen, M.J.E., Peter, J., 2015. Gender (In)equality in Internet Pornography: A Content Analysis of Popular Pornographic Internet Videos. *The Journal of Sex Research* 52, 721–735. <https://doi.org/10.1080/00224499.2014.976781>
- Konetzka RT, Daifeng He, Dong J and Nyman JA (2019). Moral Hazard and Long-Term Care Insurance. *The Geneva Papers on Risk And Insurance: Issues And Practice* 44(2):231-251.
- Lahoti, R., Swaminathan, H., 2013. Economic Growth and Female Labour Force Participation in India. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.2284073>
- Maarse, J. H., & Jeurissen, P. P. (2016). The policy and politics of the 2015 long-term care reform in the Netherlands. *Health Policy*, 120(3), 241–245.
- Mammen, K., Paxson, C., 2000. Women’s Work and Economic Development. *Journal of Economic Perspectives* 14, 141–164. <https://doi.org/10.1257/jep.14.4.141>
- Matteo, J., Pavolini, E., Raitano, M., & Natili, M. (2018). ESPN Thematic Report on challenges in longtermcare – Italy. ESPN Thematic Report on Challenges in long-term care. <https://ec.europa.eu/social/BlobServlet?docId=19848&langId=en>.
- Matus-López, M., & Terra, F. (2021). The Long-Term Care System in Uruguay. *Social policy country briefs*.

Matus-López, M., & Chaverri-Carvajal, A. (2021). Progress Toward Long-Term Care Protection in Latin America: A National Long-Term Care System in Costa Rica. *Journal of the American Medical Directors Association*.

Narayana, M.R., 2010. Impact of Economic Globalization on Urbanization: A Comparative Analysis of Indian and Select Global Experiences. *India Quarterly: A Journal of International Affairs* 66, 91–116. <https://doi.org/10.1177/097492841006600106>

National Bureau of Statistics, PRC 2021. The seventh National Population Census. http://www.stats.gov.cn/english/PressRelease/202105/t20210510_1817185.html

Neff, D.F., Sen, K., Kling, V., 2012. The Puzzling Decline in Rural Women’s Labor Force Participation in India: A Reexamination. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.2143122>

Norton, E.C., 2016. Health and Long-Term Care, in: *Handbook of the Economics of Population Aging*. Elsevier, pp. 951–989. <https://doi.org/10.1016/bs.hespa.2016.06.001>

OECD. (2011). *Help Wanted? Providing and Paying for Long-Term Care*. Paris: Organisation for Economic Co-operation and Development. Pauly, M. V. (2004). Medicare drug coverage and moral hazard. *Health Affairs*, 23(1), 113–122

OECD (2020). Affordability of long-term care services among older people in the OECD and the EU. Access the full report at <https://doi.org/10.1787/2592f06e-en>.

OECD (2021), OECD Labour Force Statistics 2021, OECD Publishing, Paris.

OECD (2021). *Health at a Glance 2019 - OECD Indicators*. OECD Publishing, Paris. doi: 10.1787/4dd50c09-en

OECD (2019), *Pensions at a Glance 2019: OECD and G20 Indicators*, OECD Publishing, Paris, <https://doi.org/10.1787/b6d3dcfc-en>.

Olsen, W., 2006. A Pluralist Account of Labour Participation in India. Economics Series Working Papers, University of Oxford, Department of Economics, GPRG-WPS-042.

Phillips, D. R and Chan, A.C.M (2002). Ageing and Long-Term Care. National Policies in the Asian-Pacific. Asian Development Research Forum.

Pavolini, E., Ranci, C., & Lamura, G. (2016). Long-term care in Italy. In *Long-term care for the elderly in Europe* (pp. 89–106). Routledge.

Plackett, B (2022). Tackling the crisis of care for older people: lessons from India and Japan, *Nature*, 601, 2-12-14.

Rangrajan, C., Iyer Kaul, P., Seema, 2011. “Where Is the Missing Labor Force? *Economic and Political Weekly* 46.

Rapp T, Chauvin P, Sirven N. 2015. Are public subsidies effective to reduce emergency care? Evidence from the PLASA study. *Social Science & Medicine* 138: 31-37

Raymond, A N Bazeer, C Barclay, H Krelle, O Idriss, C Tallack, E, Kelly (2021). *Our ageing population: how ageing affects health and care need in England*. The Health Foundation, REAL Centre.

Rodrigues et al (2013). The Indirect Cost of Informal Care. *Employment, Social Affairs & Inclusion. Research Note 8, European Commission*.

Roit, Da, & Le Bihan, O. (2015). Cash for care benefits: an international perspective. In C. Gori, J. L. Fernandez, & R. Wittenberg (Eds.), *LTC Reforms in OECD countries*, University of Bristol (pp. 143–166). London: Policy Press.

Rodrigues, R., Nies, H., 2013. Making Sense of Differences — the Mixed Economy of Funding and Delivering Long-Term Care, in: Leichsenring, K., Billings, J., Nies, H. (Eds.), *Long-Term Care in Europe*. Palgrave Macmillan UK, London, pp. 191–212.
https://doi.org/10.1057/9781137032348_9

Rothgang, H. (2010). Social insurance for long-term care: An evaluation of the german model. *Social Policy Administration*, 44(4), 436–460.

Sato M, Hashimoto H, Tamiya N, Yano E. 2006. The effect of a subsidy policy on the utilization of community care services under a public long-term care insurance program in rural Japan. *Health Policy* 77: 43-50.

Scheil-Adlung, X. (2015). *Long-term care protection for older persons: a review of coverage deficits in 46 countries*. Geneva, Switzerland: ILO.

Skira, M. M. (2015). Dynamic wage and employment effects of elder parent care. *International Economic Review* 56(1), 6-93.

Tanaka, S. (2016) A proposal for redesigning social security: long-term care pension. *The obligation*, 41(1): 98–117.

U.S. Senate Commission on Long-Term Care (2013). Report to Congress. 30 September 2013. Available at <http://ltccommission.org/ltccommission/wp-content/uploads/2013/12/Commission-on-Long-Term-Care-Final-Report-9-26-13.pdf>

Van den Berg, B., Ferrer-i Carbonell, A., 2007. Monetary valuation of informal care: the wellbeing valuation method. *Health economics* 16 (11), 1227–1244.

Van den Berg, B., Fiebig, D. G., Hall, J. (2014). Well-being losses due to care-giving. *Journal of health economics*, 35, 123-131

Vidal-Melia, C., Ventura-Marco, M., & Pla-Porcel, J. (2020). An NDC approach to helping pensioners cope with the cost of long-term care. *Journal of Pension Economics & Finance*, 19(1), 80-108.

- van den Berg B., Brouwer W.B., and Koopmanschap M.A. (2004). Economic valuation of informal care. An overview of methods and applications. *European Journal of Health Economics* , 5(1), pp. 36- 45.
- von Ginneken, E and Kroneman, M 2015. Long-term care reform in the Netherlands: too large to handle? *Eurohealth*, 21(3): 47-50.
- United Nations Department of Economic and Social Affairs, 2020. *World Population Ageing 2019*. UN.
- Ugalmugle and Swain, 2021, Long-term care market. Global Market Insight. <https://www.gminsights.com/pressrelease/long-term-care-market>
- Wang, Y., Li, J., Ding, L., Feng, Y., Tang, X., Sun, L. and Zhou, C., 2021. The effect of socioeconomic status on informal caregiving for parents among adult married females: evidence from China. *BMC geriatrics*, 21(1), pp.1-9.
- Watts, M., Musumeci, M., & Chidambaram, P. (2020, February 4). Medicaid home and community-based services enrolment and spending. The Henry J. Kaiser Family Foundation. <https://www.kff.org/medicaid/issue-brief/medicaid-home-and-communitybased-services-enrollment-and-spending/>
- World Bank, 2019. Fertility rate, total (births per woman). *World Bank*.
- World Bank, 2021. Hospital beds (per 1,000 people). *World Bank*. <https://data.worldbank.org/indicator/SH.MED.BEDS.ZS>
- Wu, X. Y., and L. X. Li. 2004. "The Motives of Intergenerational Transfer to Elderly Parents in China: Consequences of High Medical Expenditure." *Health Economics* 23 (6): 631–652. doi:10.1002/hec.2943
- Yoo B-K, Bhattacharya J, McDonald KM, and Garber AM (2004). Impacts of Informal Caregiver Availability on Long-term Care Expenditures in OECD Countries. *Health Services Research* 39(6 pt 2):1971-1992.

APPENDIX

Figure A1.

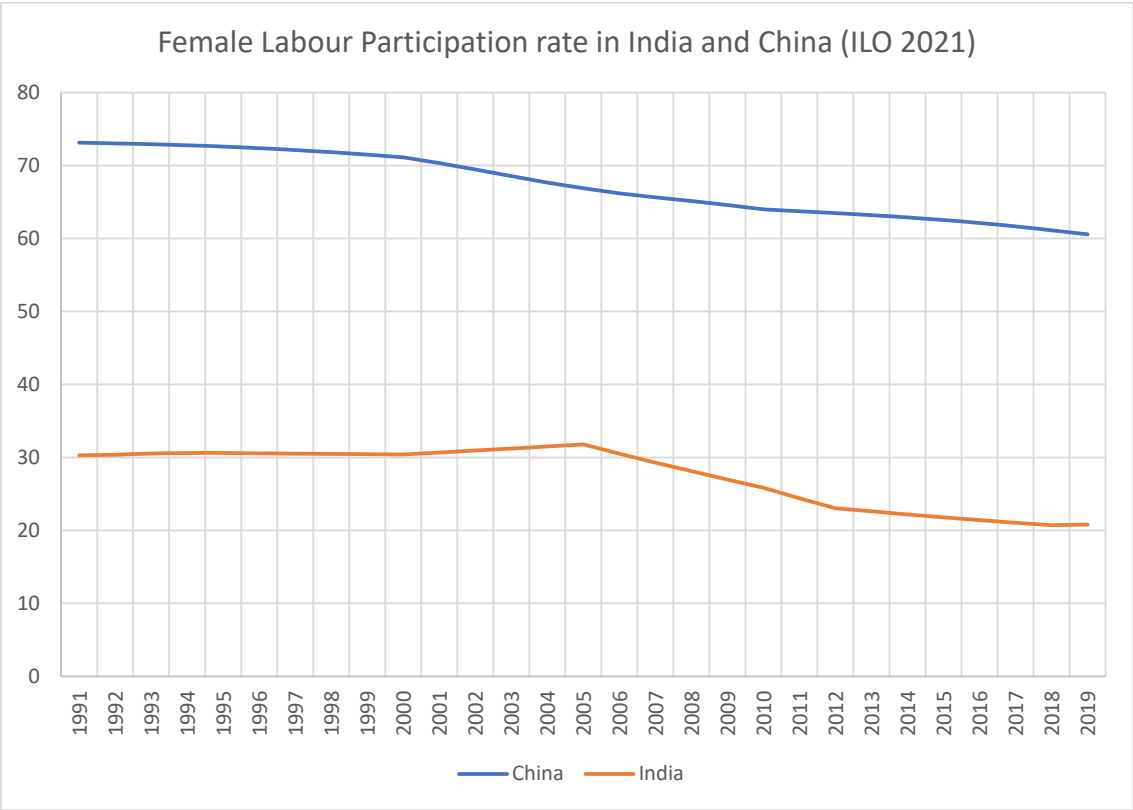


Figure A2.

